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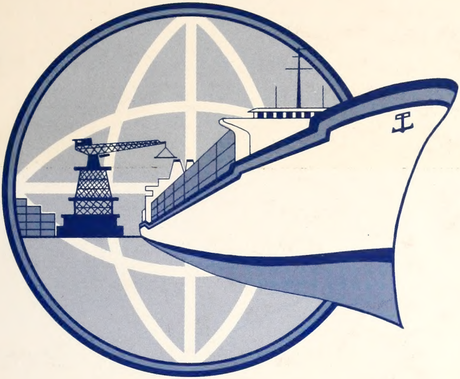

The Maritime Aids of the Six Major Maritime Nations

U.S. DEPARTMENT OF COMMERCE
Maritime Administration
Office of Policy and Plans
November 1977

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FOREWORD

Section 211(f) of the Merchant Marine Act of 1936 states that:

> The Secretary of Commerce is authorized and directed to investigate, determine, and keep current records of - The extent and character of the governmental aid and subsidies granted by foreign governments to their Merchant Marine . . . .

This document has been compiled in accordance with the authority granted in the passage above.

THE MARITIME AIDS OF THE SIX MAJOR MARITIME NATIONS

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INTRODUCTION

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INTRODUCTION

A. OBJECTIVES OF THE MARITIME AIDS STUDY

This study of Maritime Aids of the Six Major Maritime countries was undertaken to accomplish the following objectives:

- *To document the maritime aids employed by each of the six major maritime nations in order to assist its shipping and shipbuilding industries.*

- *To document the trends in types of aids employed over the 1971-1975 period and subsequently.*

- *To evaluate the effectiveness of the aids in achieving the stated goals of the programs. In the absence of stated goals, the effectiveness of the aid programs is evaluated in terms of "public interest" goals such as shipyard capacity generated, national flag fleet capacity generated, jobs created or maintained in these sectors, balance of payments contribution by these sectors, etc.*

- *To evaluate the effectiveness of aid programs both in terms of benefits and in terms of financial performance achieved by the shipping or shipbuilding industry of the country.*

- *To investigate how the expanding maritime activities of Comecon, OPEC, and less developed countries will affect the major maritime powers and what measures the major powers may take to offset the impact of these other countries' maritime activities.*

- *To document and analyze the effectiveness of government responses to tanker and shipbuilding overcapacity situations and to assess the effectiveness of the aid programs in reducing the adverse impacts of these overcapacity situations.*
- *To investigate how trends and changes in the economic environment of each country affected the performance of the maritime industry in that country.*
- *To document and analyze recent and prospective maritime policy changes in major maritime nations and to evaluate their prospects for success in terms of future economic, environment, and competitive conditions.*

Chapter I presents an Executive Summary of the maritime aids employed by the six nations studied. The countries included are Japan, United Kingdom, Norway, Sweden, West Germany and France. Chapters on each country address in detail the maritime aid programs employed by these six major maritime nations. Each chapter documents the maritime aids in effect during the 1971-1975 period, summarizes their benefits and effectiveness, and analyzes the recent and prospective programs these nations have developed.

These six nations not only are world leaders in shipbuilding capacity and size of home fleet but also represent a broad spectrum of approaches and reactions to the opportunities and challenges of large-scale maritime activity. For each nation studied, the maritime industry has a unique importance and effect on national economics.

Chapter II focuses on Japan, following its ascendance in the past two decades to the position of world leader in shipbuilding and ship operations. Chapters III and IV address the United Kingdom and Norway, major fleet operating countries. Chapters V and VI discuss the shipbuilding-oriented nations of Sweden and West Germany. Chapter VII presents the maritime aid programs of France, whose shipbuilding and ship operating activities are fairly well balanced. The appendices summarize the activities of selected Comecon, OPEC and LDC countries, include the OECD Understanding on Ship Exports, and contain a detailed bibliography of references and source materials.

The remainder of this introduction reviews trends in world shipping and shipbuilding during the 1971-1975 period and the relationship of the six nations to world activity, and describes the analytical methods employed in the conduct of this study.

B. TRENDS IN WORLD SHIPPING AND SHIPBUILDING

The objective of this study is to analyze the types of assistance programs for national shipping and shipbuilding industries employed by the six major maritime countries over the 1971-1975 period as well as recent and prospective programs and trends. It is not the purpose of this study to address conditions in the world's shipping and shipbuilding industries. Other studies have covered the matter extensively. Nevertheless, trends in world market conditions have certainly had an impact on the economies of the shipping and shipbuilding industries in the six countries studied and in turn have influenced the effectiveness and types of assistance programs employed. It is therefore important to consider some of the principal trends in the world shipping and shipbuilding industries over the study period.

Between the end of 1970 and 1975, the world shipbuilding and shipping industries experienced a virtual explosion followed by one of the most severe collapses in history. The world fleet increased by some 70 percent on a deadweight basis and by 58 percent on a gross registered tonnage basis. These rates of tonnage growth represent compound annual growth rates of 11.2 and 9.5 percent, respectively. Shipbuilding deliveries increased at similar rates over the period, with tanker construction representing the largest increase (see Exhibits 1 and 2).

Exhibit 1

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY

WORLD SHIPBUILDING ACTIVITY AND WORLD FLEET

Oceangoing Ships of 1,000 Gross Tons and Over
(DWT and GRT in thousands)

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
					SHIPBUILDING			
					Orders Outstanding at Year-End			
Total Ships[a]	- Number	2,790	3,004	2,449	2,826	2,796	3,123	2.3
	DWT	130,730	162,807	160,029	224,993	216,299	176,846	6.2
	GRT					127,156	104,343	NA
Tankers	- Number	648	803	898	1,280	1,310	1,031	9.7
	DWT	75,517	99,991	116,744	184,239	178,511	129,550	11.4
	GRT					103,060	74,380	NA
Bulk Carriers	- Number	732	840	572	631	589	792	1.6
	DWT	41,499	49,527	33,826	32,262	29,190	34,513	-3.6
	GRT					18,269	20,902	NA
Freighters	- Number	1,410	1,361	979	915	897	1,256	-2.3
	DWT	13,714	13,289	9,459	8,492	8,598	12,682	-1.5
	GRT					5,827	8,722	NA
					Deliveries			
Total Ships[a]	- Number	1,086	1,092	1,119	1,094	1,098	1,097	0.2
	DWT	35,178	39,817	44,350	52,093	59,512	59,053	10.9
	GRT	20,002	22,612	25,424	29,152	32,499	31,912	9.8
Tankers	- Number	222	223	216	291	363	387	11.8
	DWT	20,259	20,559	21,241	29,268	41,747	44,261	16.9
	GRT	10,306	10,532	10,669	14,931	21,518	22,804	17.2
Bulk Carriers	- Number	242	294	333	305	288	249	0.6
	DWT	9,408	13,933	17,394	17,906	13,485	10,770	2.7
	GRT	5,592	8,003	9,880	10,093	7,744	6,182	2.0
Freighters	- Number	619	563	553	486	436	450	-6.2
	DWT	5,499	5,281	5,645	4,869	4,243	3,996	-6.2
	GRT	4,073	3,971	4,702	3,999	3,145	2,822	-7.1
					FLEET			
					Registered Fleet			
Total Ships[a]	- Number	19,980	20,544	21,009	21,600	22,449	22,872	2.7
	DWT	326,999	361,739	399,552	446,370	503,348	556,572	11.2
	GRT	211,401	230,302	250,543	275,727	306,366	333,042	9.5
Tankers	- Number	4,232	4,431	4,581	4,813	5,121	5,311	4.6
	DWT	153,075	173,196	192,894	220,481	261,440	302,217	14.6
	GRT	88,896	99,105	108,558	122,370	143,399	163,731	13.0
Bulk Carriers	- Number	2,954	3,218	3,539	3,800	4,075	4,272	7.7
	DWT	77,173	90,962	108,512	126,140	139,267	150,080	14.2
	GRT	47,199	55,009	64,822	74,660	82,313	88,194	13.3
Freighters	- Number	11,899	12,013	12,029	12,173	12,478	12,575	1.1
	DWT	92,355	93,297	94,128	96,083	99,270	101,248	1.9
	GRT	67,820	68,805	70,073	72,027	74,288	75,284	2.1

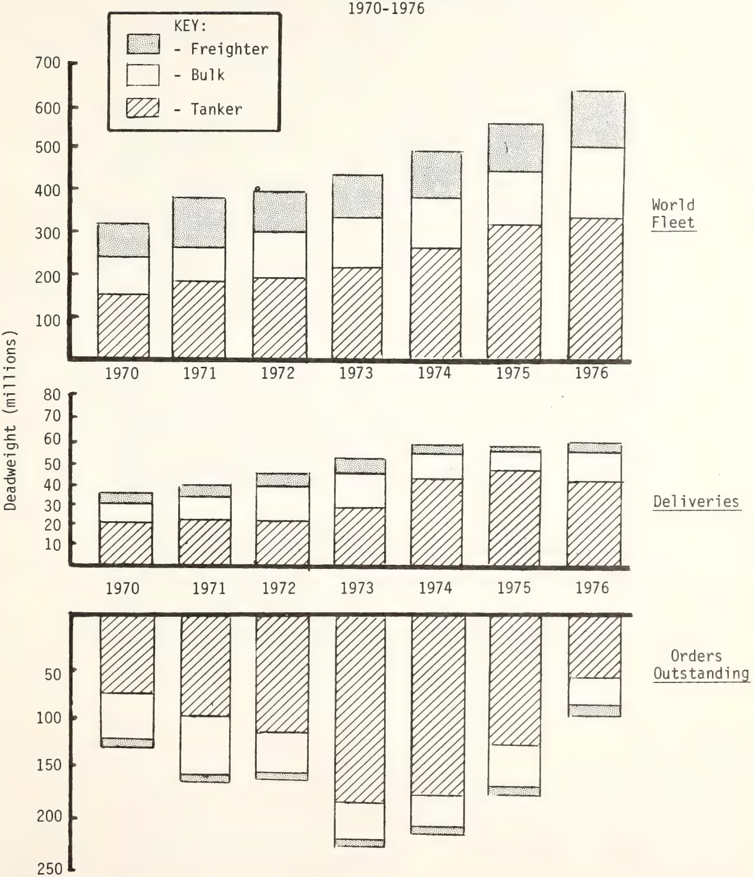
[a] Includes Combination Passenger/Cargo vessels not shown separately.

Source: SHIPBUILDING - New Ship Construction, Maritime Administration, U.S. Dept. of Commerce.
FLEET - Merchant Fleets of the World, Maritime Administration, U.S. Dept. of Commerce.

Exhibit 2

MEASURES OF MARITIME ACTIVITY
WORLD SHIPBUILDING AND WORLD FLEET

1970-1976



Source: Merchant Fleets of the World and New Ship Construction, Maritime Administration, U.S. Department of Commerce.

The growth in total demand for new ships, reflected in outstanding orders, peaked at the end of 1973. At that time, orders outstanding on a deadweight tonnage basis were 72 percent above the comparable figure of just three years earlier, and were equivalent to 50 percent of the existing world fleet.

By early 1974, the effects of the recession began to cause a decline in outstanding orders as record deliveries and cancellations worked off the backlog. By the end of 1975, new orders had fallen off sharply, and outstanding orders represented less than 3.0 times the annual output of that year compared with 4.5 times the annual output at the end of 1973. Forecasts of future annual requirements for shipyard output ranged between 30 and 50 percent of 1974 and 1975 delivery levels. By mid-1977 the world orderbook stood at 51.4 million grt, and orders were being placed at 25 percent of estimated world shipbuilding capacity. Almost 86 percent of all orders were scheduled to be delivered by year-end 1978.

In the shipping sector, demand for tanker capacity decreased sharply at the end of 1973. During 1974 the demand for bulk carriers and freighter capacity began to fall as a world recession developed. A recovery started to occur only at the end of 1975. In the meantime, record levels of ship capacity were delivered, compounding the supply and demand problems of the existing fleet.

As a result of these developments, ship operators began experiencing financial difficulties during 1974, with most all sectors in serious recession by 1975. The shipbuilding industry continued to construct record output volumes during the period, but was faced with a perilous fall-off in new ship orders--a situation that initiated severe price competition for the greatly reduced level of new orders.

C. RELATIONSHIP OF THE SIX MARITIME NATIONS TO WORLD ACTIVITY

1. Ship Operating

In terms of national flag fleet size, Japan, the United Kingdom and Norway were ranked second, third, and fourth in the world respectively, behind Liberia, the principal flag of convenience. Sweden and West Germany (the world's second and third largest shipbuilders) were ranked twelfth and eleventh in size of national flag fleet, while France ranked ninth in fleet size. In aggregate, the national flag fleets of the six study countries accounted for 37 percent of the world's registered tonnage and approximately 47 percent of the world's tonnage excluding Liberia. At the beginning of the study period (1970), the six countries accounted for 41 percent of the world's total gross registered tonnage and 49 percent of the world fleet excluding Liberia, which at that time accounted for only 16.3 percent of the world total. Thus, over the 1970-1975 period, the six study countries have maintained about half of the registered tonnage of the world's national flag fleets excluding Liberia. As a flag of convenience attractive to tanker owners, Liberia increased its share of the total registered tonnage from 16 to 21 percent between 1970 and 1975. (See Exhibit 3 for the world rank and magnitude of the six fleets in 1975.)

As discussed in the chapter on Japan, Japanese flag operators have significantly increased their fleet of controlled tonnage between 1970 and 1975. That tonnage is primarily registered under flags of convenience. If this Japanese-controlled fleet is included in the above comparisons, the ship operators of the six study countries maintained a 45 percent share of a world fleet that increased by almost 60 percent in size over the 1970-1975 period.

Exhibit 3

RELATIONSHIP OF THE SIX STUDY COUNTRIES TO THE WORLD SHIPPING AND SHIPBUILDING INDUSTRIES

1975

Country	Number	Deadweight Tons	Gross Registered Tons	Percent of World GRT	World Rank
	A. 1975 Registered National Flag Fleet				
Japan	2,051	63,238	37,164	11.2	2[a]
United Kingdom	1,576	54,913	33,229	10.0	3
Norway	991	47,796	27,167	8.2	4
Sweden	324	12,723	7,511	2.3	12
West Germany	611	13,453	8,347	2.5	11
France	444	17,690	10,319	3.1	9
Subtotal	5,997	209,813	123,737	37.2	
World Total	22,872	556,572	333,042	100.0	
	B. 1975 Shipbuilding Deliveries				
Japan	502	31,250	16,223	50.9	1
United Kingdom	45	2,265	1,260	3.9	4
Norway	42	1,775	1,034	3.2	6
Sweden	33	4,320	2,213	6.9	2
West Germany	73	4,140	2,181	6.8	3
France	27	1,855	1,190	3.7	5
Subtotal	722	45,605	24,128	75.6	
World Total	1,097	59,053	31,912	100.0	

[a] In 1975 the Liberian-flag ranked first in GRT with 21.1 percent of the world total.

Source: Merchant Fleets of the World and New Ship Construction, Maritime Administration, U.S. Department of Commerce.

2. Shipbuilding

In 1975, the six nations studied occupied the six top positions in the world in terms of gross tons of shipbuilding deliveries and in aggregate held a 75 percent share of total world shipbuilding output (see Exhibit 3). This figure was up slightly from their 71 percent share of the world's total shipbuilding gross ton output in 1970. Between 1960 and 1975, Japanese shipbuilding capacity increased from 1.7 million grt to 17 million grt while total EEC capacity only expanded from 4 million grt to 7.8 million grt. The six nations displayed widely varied degrees of self-sufficiency in ship production relative to the demands of their merchant marines (see Exhibit 4).

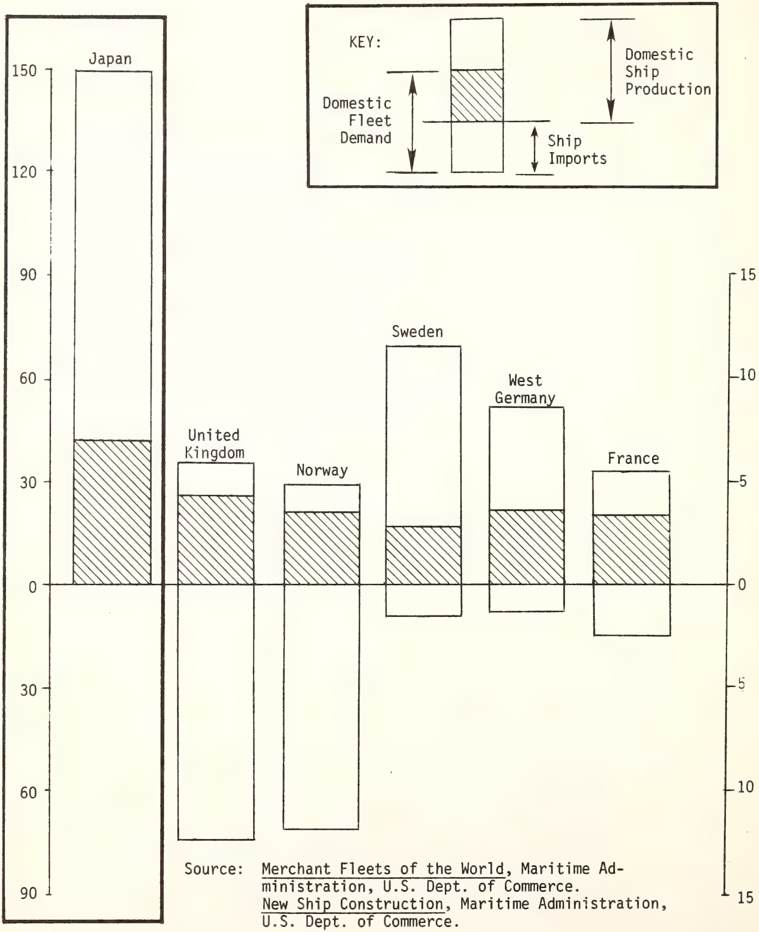
Exhibits 5 and 6 highlight the rapidly declining backlogs relative to production for the six countries, both individually and as a group. Of greater long-term significance for the six study countries are their diverging shares of world production and world orderbook (see Exhibit 6). While the six countries continued to generate over 75 percent of the world's ship production in 1975, their aggregate share of outstanding orders declined sharply from 70.5 percent in 1974 to 54.0 percent by the end of 1976.

The six countries' declining shares of world orderbooks reflect the significant gains Comecon and LDC countries have made in the shipbuilding sectors. These country groups, including OPEC countries, have also made similar gains, but less dramatic to date, in the shipping sector. The implications of these trends and their impact on the major maritime countries are summarized in the Executive Summary and in the appendices, which address each of these country groups individually.

Exhibit 4

SIX MAJOR MARITIME NATIONS NATIONAL SHIPBUILDING AND RELATIONSHIPS TO FLEET REQUIREMENTS IN MILLION DEADWEIGHT TONS

1970-1975



Source: Merchant Fleets of the World, Maritime Administration, U.S. Dept. of Commerce.
New Ship Construction, Maritime Administration, U.S. Dept. of Commerce.

Exhibit 5

SIX MAJOR MARITIME NATIONS
SHIPBUILDING DELIVERIES AND YEAR END BACKLOGS

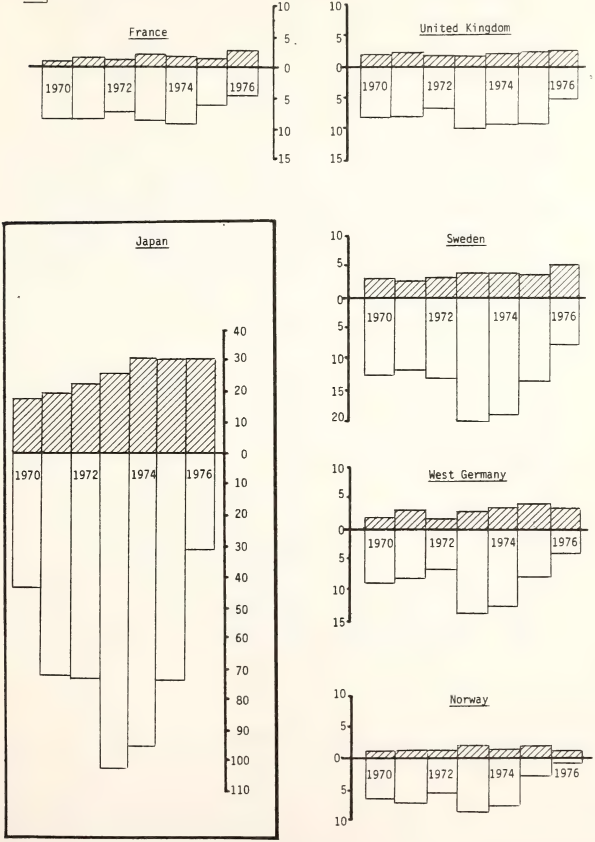
1970-1976

(million deadweight)

Key:

▨ - Deliveries during Year

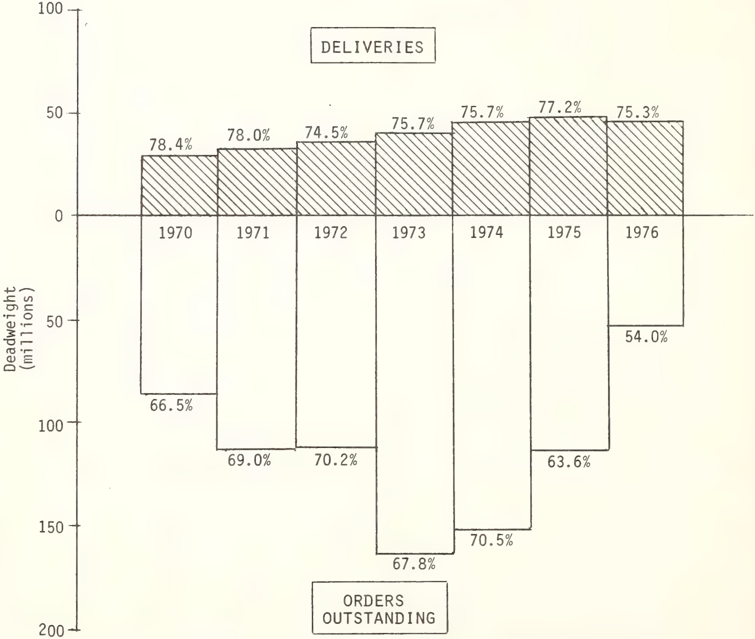
☐ - Backlogs at Year End



Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce.

Exhibit 6

SIX MAJOR MARITIME NATIONS COMBINED DELIVERIES AND YEAR-END ORDERS OUTSTANDING IN DEADWEIGHT TONS AND AS PERCENT OF WORLD ACTIVITY



Source: New Ship Construction, Maritime Administration, U.S. Department of Commerce.

D. CHARACTERISTICS OF THE SIX MARITIME NATIONS

1. Japan

The island nation of Japan has emerged from post-World War II disarray to become the world's largest non-convenience flag fleet operator and producer of 50 percent of all the world's new tonnage. Despite the magnitude of Japan's fleet, the relative size of Japan's shipbuilding industry supports the country's consideration as a shipbuilding nation.

The size and variety of Japan's conglomerate-owned and independent shipyards enables her to supply 100 percent of the Japanese fleet's tonnage requirement and thus to obviate the need for importing tonnage. This capability is even greater, for Japan has produced as much as six times the large home-fleet requirement. Japanese yards have continued to expand well into the mid-1970s. The immense capacity that resulted combined with competitive pricing, government support and efficiency has caused Japan to become the target for other developed nations' shipbuilders' accusations that too much shipbuilding capacity was built too late in the boom of tanker construction.

Like the shipyards that built it, the Japanese fleet is dominated by a few diversified owners. Because Japan is a major maritime power with high cost labor, the Japanese fleet owners have attempted to improve their competitive position by chartering and controlling a fleet of foreign-owned vessels manned by low-cost crews. This chartered fleet, most of whose vessels were built in Japan, has grown rapidly over the years and is nearly as large as the Japanese flag fleet. Together, the chartered fleet and the Japanese fleet enable the country to control her foreign trade, while conducting a minimum of cross trading. One drawback is the outflow of yen in payment of services to the chartered fleet. This is in part compensated for by the construction of the fleet in Japanese shipyards, which represents the export of goods.

2. United Kingdom

Possessor of the world's largest national fleet after Liberia's convenience registration and Japan, the United Kingdom is solidly among the ranks of ship operating nations. With its modern well-managed and manned vessels, the U.K. fleet has shown relative resilience through new technologies and the profitability cycles of the shipping industry. Like the Norwegians, U.K. owners absorb some 70 percent of domestic shipyard production as well as significantly more assistance than the shipbuilding sectors. Due to devaluation, relatively modest labor costs, good management and attractive maritime aids, the proportion of the foreign flag British fleet is declining relative to the home fleet.

U.K. shipyards are both benefited and burdened by the country's long-standing shipbuilding tradition. The fact that some 40 percent of all shipbuilding man-hours were expended on naval construction is only one indicator of the unique nature of U.K. shipbuilding. Prior to the 1960s, nearly all U.K. shipyards had long traditions of producing high-labor input general cargo and liner tonnage, and entered the 1970s with a broad range of facilities, technologies and modernity.

In the 1960s, certain U.K. shipyards expanded into the construction of large liquid and dry bulk tonnage while others developed successful standardized cargo liners that replaced World War II and post-war tonnage. Ironically, the cyclicality of tanker demands combined with the emergence of Comecon and LDC countries as low-labor cost builders of general cargo vessels, has seriously threatened the survival of both sectors of U.K. shipbuilding. U.K. shipyards have generally lacked both the capital and labor relations needed for installing more efficient methods that would enable them to achieve on-time delivery and thus to compete with the low-labor cost and new yards abroad. While the prospects of devaluation may attract some ship orders, the opportunity for expanded North Sea construction has largely passed.

3. Norway

The merchant marine plays a vital role in Norway's economy as a major contributor of foreign currency. Because the foreign currency earned by vessels through cross trading is subject to tight controls, the small credit markets in Norway have required managers to display great skill in vessel sale/resale decisions and operations management. Norway's large fleet classifies her as a ship operating nation. Her shipyards deliver 70 percent of their output to the home fleet. In addition, Norwegian owners import two-thirds of their tonnage from foreign yards. As will be seen in the following chapters, these government aids helped to encourage owners to compete in the volatile tanker market, an area which has caused Norway concern because of the recent downturn in bulk shipping demand.

The Norwegian shipyards made early commitments to the construction of larger ships in addition to the traditional production of liners, refrigerated cargo ships and specialized tankships. This commitment required highly efficient and specialized production methods so that the vessels could compete with those of the Japanese as well as withstand harsh winters. The recent recession left Norway with large numbers of cancelled orders for tankers while the country's restrained energy policy and need to attract foreign capital restricted its opportunities for constructing vessels for the offshore oil and gas markets.

4. Sweden

In Sweden, the world's second-ranked shipbuilder during the study period and a major exporter of ships, shipbuilding dominates ship operations. Sweden made large investments in innovative production methods for constructing series of increasingly larger bulk carriers and tankers, vessel types that require less labor input per gross ton. While a number of smaller yards remained dedicated to building a variety of smaller ship types, Sweden's large shipyards sought to compete with Japan in building larger ships despite the constraints of high-labor costs, social benefit costs, and the fact that Swedish shipyard productivity per man had been level since the mid-1960s on a compensated ton basis. While the large Swedish shipyards were profitable in the 1960s when they enjoyed technological advantages, Japanese competition and tanker overcapacity ultimately jeopardized the very existence of Swedish shipbuilding and caused major relocation of manpower, expertise and government aid.

The Swedish fleet engages primarily in cross-trading and, like the Norwegian fleet, earns a large amount of foreign currency for the Swedish economy. The weak credit markets at home have forced owners to rely almost solely on their own capital in financing their fleets. The Swddish fleet is challenged by the same high operating costs that face other developed nations, and competitiveness has been sought through modernization, chartering and the sale of tonnage abroad.

5. West Germany

West Germany's large population and broad industrial base overshadow the importance of shipbuilding as a major heavy industry. Nevertheless, shipbuilding dominates shipping, and West German shipyards produce nearly twice the tonnage required by the home fleet. West German shipyards are among the world's most product-oriented, capable not only of meeting domestic demand for replacement tonnage but also of tracking the shipping community's demand for specialized ship types and offering operators and speculators a wide and timely variety of quality tonnage. This policy contrasts with that of the United Kingdom, where the traditional importance of the right vessel of trampship replacement declined as larger and larger vessels were constructed. German yards were able to attain this unique ability to meet both replacement and specialized demand through technological expertise, effective analysis of world shipping trends and flexible facilities and shipbuilding techniques. The German shipbuilding industry deliberately sacrificed short-term economies and profits that might have been realized during the tanker construction boom period for long-term resilience and flexibility.

Because the strength of German exports depends on competitive pricing, shippers have sought the lowest cost transportation. German shipowners have responded to this challenge and those of high labor and other operating costs with a program of fleet replacement and modernization. This new tonnage affords fleet owners a competitive footing. Shipping is part of Germany's invisible trade deficit. German owners have traditionally sought autonomy from maritime aid programs aimed at shipbuilding and have competed for financing in the well-developed German capital markets.

6. France

Both the shipbuilding and shipping industries of France reflected a fair balance between capacity and demand. During the study period, French yards exported one-third of their production and the French fleet imported one-third of its demand. The development of both industries has reflected a post war goal of the French government to overcome the negative marine account balance of payments by increasing the French share of cargo and through the development of a streamlined shipbuilding industry. France and Norway were the only nations studied that increased their freighter fleets during the study period. The expansion of the tanker fleet affords the French better control of energy imports. Only 40 percent of the French fleet activity is in the cross trades.

French shipyards have been rationalized and capacities have been expanded. Since the 1960s the rededication of less efficient facilities to other types of industrial activity has taken place and more recently the government's centralized programs for French tonnage are expected to cushion the impact of the recent slump in orders worldwide.

E. ANALYTICAL METHODS

1. Categories of Assistance Programs

In order to facilitate the identification of trends in assistance levels and to clarify the comparisons between countries, the aid programs studied have been categorized under seven types of assistance programs for both the shipping and shipbuilding industries. These include:

> *Investment Financing Assistance* - These programs helped finance the capital investments of the industry. For ship operators, the aid was primarily intended for the purchase of vessels. Typical assistance included low interest loans, interest subsidies, or loan guarantees. For shipbuilding, the aid was given only for the purchase of new equipment or for meeting modernization needs. The forms of these assistance programs may often be similar to those provided to shipowners, however, direct grants unrelated to vessel sales may be included.
>
> *Credit Assistance* - This category was not applicable to the shipping industry. For shipbuilding, it includes programs by which customer financing is assisted or supplier credits aided. These programs may include favorable credit terms to either the customer or the shipyards for the refinancing of the ship sale. Loans, interest subsidies, and loan guarantees are typical programs.
>
> *Tax Allowance Programs* - These programs were applicable to both shipping companies and shipbuilding companies. They included depreciation allowances, tax credits, tax free or deferred reserves, reduced corporate or seamen's tax rates, customs duty allowances, and tax exemptions.

> *Direct Subsidies* - This category includes only direct payments for reducing the costs of vessel owners in purchasing and operating vessels. Although all of the previously described categories of assistance programs can affect vessel costs and some, such as interest subsidies, are direct payments, this category is restricted to programs directly related to ship purchases and operation. For operators, the assistance includes operating subsidies and equipment grants, which may or may not be restricted to domestic shipyards. For shipbuilders, the assistance includes construction subsidies, which may or may not be restricted to national flag construction.
>
> *Preference Programs* - These programs may cover cargo preference on particular commodities and customs duties on the importation of vessels and includes any aid which helps the shipping industry or the shipbuilding industry obtain a preferential position.
>
> *Government Ownership* - This category includes the partial or full ownership by the government of vessel operating companies or shipyards.
>
> *Other* - This general category includes all other assistance programs not classified elsewhere. Typical programs included under this category are government supported export insurance programs and research and development funding by the government.

The countries studied typically utilize programs under several or all categories and frequently have utilized several separate programs within a single category.

Each chapter on the assistance programs for the shipping and shipbuilding industries of the countries studied discusses the specific principal aid programs by category. The summaries of the benefits of the assistance programs to each industry provide a basis for identifying both the trend in the magnitude of assistance and also the relative emphasis on each type of assistance provided over the study period.

2. Treatment of Exchange Rates

The foreign currency figures in this report have been converted to dollars at a constant exchange rate value. The average value for 1975, the latest figure in most of the time series included in the study, was utilized.

The fluctuations in exchange rates has a significant impact on the maritime industry, as is discussed elsewhere in this report. There are tradeoffs, however, in the effects of utilizing alternative exchange rate conversions.

A constant exchange rate was chosen in order to present the trends in the amounts of aid provided under the foreign assistance programs as they would have been viewed by the shipping and shipbuilding companies in each country. By converting the figures at the 1975 conversion rate, the values of the programs are restated in dollar terms, and thus the relative magnitude of the programs for previous years is accurately presented. This procedure prevents the possibility that fluctuations in an exchange rate will alter the apparent trend in use in a given program.

The use of a constant exchange rate, however, will alter the current dollar values for years other than 1975. That is, the 1970 dollars shown for a given program may be higher or lower than the 1970 dollar equivalents, depending on the shift in exchange rates. Secondly, in comparing the magnitude of aid programs for two countries, caution must be applied with respect to the earlier years in each time series. The relative shifts in exchange rates can compound the above problem, particularly if one currency has been rising relative to the dollar and the second currency has been falling.

3. Treatment of Interviews

The results of interviews with key shipbuilding, ship operating, ship owning, and ship-financing executives, and representatives of government and industry in all six study countries are a key component of this study.

This study sought the first-hand analysis, opinion and evaluations of persons knowledgeable of national and international maritime developments and individuals affiliated with government assistance programs and impacting national marine developments in each country. Interviews with several persons in both the shipbuilding and shipping industries of each country permitted a consensus of opinion to emerge and a cross-calibration of international opinion and reaction to national maritime aids.

4. Measures of the Effectiveness and Benefits of Maritime Aid

It is difficult to measure how maritime aid programs effect and benefit the shipping and shipbuilding industries because of the many exogenous factors impacting world trade and these two industries. These factors include international shipping and shipbuilding markets and their competitive structure, the nature of capital markets, national economics and the diversity of these two industries. This study discusses these factors in an integral manner with the development of national maritime aids and recognizes that to attribute trends in the maritime world to specific aid programs is frequently impossible and generally not consistent with the nature of the challenge to designers of maritime aids.

Each nation was reviewed to identify national characteristics and needs. Where aids addressed specific needs, objectives or crises, this study develops the need and the design and extent of specific aids, attempting to trace aid utility in fulfilling its objective. Where national maritime goals were clearly enunciated and supported by aids in a consistent manner, measures were developed to track overall industry characteristics relevant to these goals. Summaries are included of maritime aids for each nation during the study period by industry and the direct benefits that accrued to it.

In many cases, problems common to nations resulted in different responses. This study has noted the relative effectiveness and benefits of the programs by tracing the programs and their expansion, amalgamation or abandonment. National consideration in the face of the worldwide marine recession have necessitated certain industry-wide reorganizations and even nationalization, particularly of shipyards, actions which do not point to the failure of specific aids, but to the combined inability of industries and their aids to overcome larger problems and inequities in the international marketplace. In such cases, this study has identified the larger problems, competitive inequities and assessed the utility and benefits of programs to them.

5. Previous Studies of Foreign Maritime Aids

The Maritime Administration of the United States Department of Commerce has in recent years produced several reports concerning the subject of maritime aids. One such report produced internally by MarAd is the annual document Maritime Subsidies, which outlines aid programs in more than 40 nations which do not have centrally planned economies. Another report, Foreign Maritime Aids, prepared by Collet, Gatenby and Hatfield, Inc. in 1974 for MarAd, reviews the basic economic and tax structure of Japan, Spain, Sweden, Germany, Norway and the United Kingdom and outlines maritime aid programs in the years preceding the 1973 oil embargo.

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I. EXECUTIVE SUMMARY

A. TRENDS IN THE MARITIME AIDS OF THE SIX MAJOR MARITIME NATIONS

1. Overview of Trends in Maritime Aids

Events which occurred during 1971-1975, the base study period of this report on the maritime aids employed by the six major maritime nations, and those which have occurred subsequently represent a near-complete and unprecedented cycle in maritime activity. From the pre-oil embargo years of high tanker orders and profits, the situation of shipowners and shipbuilders plunged to all-time depths, and to date the prospects for full recovery in these two industries have continued to show signs of being precluded for up to another decade. Thus, the objectives and design of maritime aids of the six nations studied were subjected to unprecedented changes and challenges from the environment in which they operated.

The assistance programs to the shipping and shipbuilding industries of the six major maritime nations have been extensive. Exhibit I-1 summarizes the levels of assistance over the base study period and the forecast trends in total aid provided by the study nations. Exhibit I-2 illustrates the forecast trends and average levels of assistance as a percent of industry revenues. When expressed as a percentage of revenues, the trends in shipping and shipbuilding aids are shown to be opposite, with shipbuilding aids forecast to increase and shipping aids forecast to decline.

The average annual assistance to the shipping industries of the six countries was $1,145 million per year between 1971 and 1975. The shipbuilding industries of the six countries received an average of $475 million in assistance each year.

These benefit levels are derived from the discounted values of aid programs to companies in the respective industries. As such, the benefit levels shown are equivalent to only a fraction of the value of shipbuilding and ship operations supported in these countries.

Exhibit I-1

SUMMARY OF BENEFITS TO SHIPPING AND SHIPBUILDING

1970-1975

(millions of dollars)

	Shipping		Shipbuilding	
	Amount	Percent of Revenue	Amount	Percent of Revenue
		Japan		
Average	208	4.3[a]	88	0.9 - 2.0[b]
Range	104 - 357	1.5 - 7.3[a]	76 - 98	0.8 - 2.4[b]
Trend	Variable	Variable	Variable	Decreasing
Forecast	Decrease	Decrease	Decrease	Decrease
		United Kingdom		
Average	320	9.2	69	14.6[c]
Range	234 - 381	5.6 - 11.2	54 - 85	10.2 - 17.4[c]
Trend	Variable	Variable	Variable	Variable
Forecast	Decrease	Decrease	Increase	Increase
		Norway		
Average	269	9.8	40	6.5
Range	198 - 333	8.2 - 11.8	32 - 56	6.3 - 6.7
Trend	Variable	Variable	Increasing	Variable
Forecast	Decrease	Decrease	Increase	Increase
		Sweden		
Average	128	8.4	33	3.8
Range	39 - 300	3.3 - 16.7	22 - 51	2.7 - 5.1
Trend	Variable	Variable	Variable	Variable
Forecast	Decrease	Decrease	Increase	Increase
		Germany		
Average	99	4.3	61	2.6
Range	56 - 145	2.6 - 6.8	39 - 78	2.1 - 3.2
Trend	Variable	Variable	Increasing	Variable
Forecast	Decrease	Decrease	Increase	Increase
		France		
Average	121	9.0[d]	179	24.1
Range	107 - 142	7.7 - 10.2[d]	118 - 239	18.4 - 27.4
Trend	Increasing	Increasing	Increasing	Increasing
Forecast	Increase	Increase	Decrease	Decrease

[a] Japan revenues are for six core companies, but include revenues from chartered vessels.

[b] Including $100 million per year of investment financing assistance to Japanese operators.

[c] U.K. revenues include naval construction.

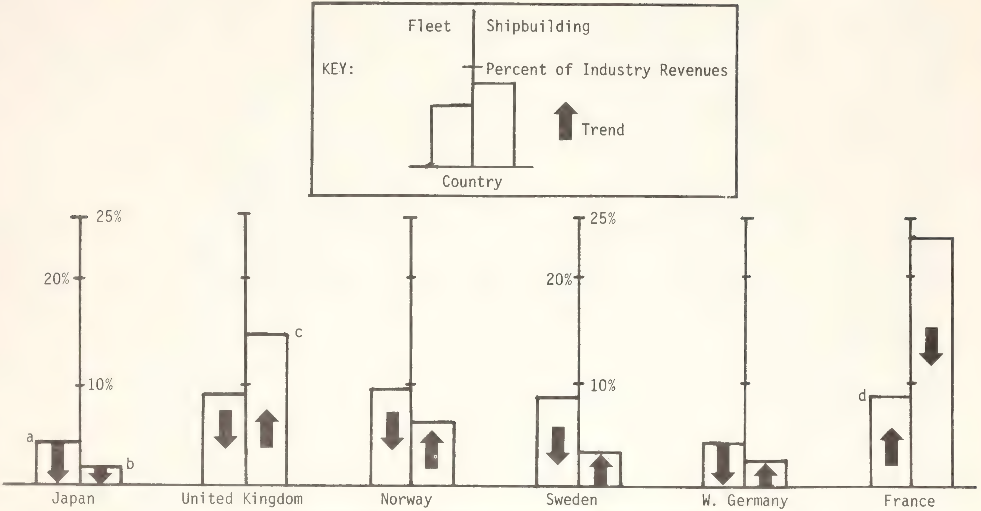
[d] Based on 1973 and 1974 revenue levels. In 1975 the percentage is expected to have been considerably higher.

Source: Exhibits I-8 and I-9.

Exhibit I-2

SUMMARY OF BENEFITS TO SHIPPING AND SHIPBUILDING AS PERCENT OF INDUSTRY REVENUES

1971-1975



Source: Exhibit I-1.

[a] Japan revenues are for six core companies, but include revenues from chartered vessels.

[b] Including $100 million per year of investment financing assistance to Japanese operators.

[c] U.K. shipbuilding revenues include naval construction of approximately 40 percent of industry revenues.

[d] Based on 1973 and 1974 revenue levels. In 1975 the percentage is expected to have been considerably higher.

Credit assistance and investment guarantees, for example, may result in beneficial interest rates to the shipping and shipbuilding industries. The value of the investment supported, however, may be 50 to 100 times greater than the annual benefit derived from comparisons with alternative financing arrangements.

During the study period, the fleets studied have been assisted in the pursuit of varied goals of growth or replacement. Exhibit I-3 summarizes the fleet replacement and net growth profiles of the six major maritime nations over the 1971-1975 period. In the near future, the emphasis of fleet aids will necessarily be on replacement; the aids will be designed to stimulate orders for domestic shipyards while simultaneously modernizing and increasing the competitiveness of the developed nations' fleets. In the past year, increases in implicit restrictions on the ordering of vessels abroad have been observed in France and Sweden, through the use of limited aids, conditional benefits and case by case reviews of owners' aid applications. This trend will continue to increase, despite any international agreements prohibiting explicit protection of domestic shipbuilding.

Tax allowance aid programs proved successful in a number of countries in achieving the goal of increasing shipowners' liquidity in good periods to buffer industry slumps through various tax benefits, including accelerated depreciation and capital gains tax deferrals. Although selected Norwegian owners were faced with financial collapse due to the precipitous decline in the tanker market, the use of such tax allowances made large contributions to the resilience of the shipping industry in general. The performance of the United Kingdom's fleet during the recession was in part the result of the country's effective tax allowance programs combined with good management practices. In mid-1977, Japanese owners were calling for a continuation of Japan's increasing use of tax allowances through liberalized depreciation schedules. Other countries will certainly review and redesign their tax benefit programs in light of post-1973 experience.

Exhibit I-3

FLEET REPLACEMENT AND FLEET GROWTH
SIX MAJOR MARITIME NATIONS AND WORLD

1971-1975

(deadweight in thousands)

	Fleet Deadweight		Deadweight		% of Deliveries	
	1970	1975	Deliveries	Net Fleet Growth	Net Growth	Net Fleet Replacement
			Japan			
Total Vessels	39,142	63,238	33,989	24,096	70.8	29.2
Tankers	16,036	33,950	20,066	17,914	89.2	10.8
Bulk Carriers	13,249	21,270	38,598	8,021	20.7	79.3
Freighters	9,782	7,945	6,213	(1,837)	0.0*	100.0*
			United Kingdom			
Total Vessels	37,065	54,913	28,231	17,848	63.2	36.8
Tankers	20,863	32,869	16,581	12,006	72.4	27.6
Bulk Carriers	6,603	14,508	9,506	7,905	83.1	16.9
Freighters	8,955	7,322	2,186	(1,637)*	0.0*	100.0*
			Norway			
Total Vessels	32,374	47,796	26,606	15,422	57.9	42.1
Tankers	17,351	28,467	17,268	11,116	64.3	35.7
Bulk Carriers	11,637	16,696	8,615	5,059	58.7	41.3
Freighters	2,335	2,559	681	224	32.8	67.2
			Sweden			
Total Vessels	6,898	11,230	8,001	4,332	54.1	45.9
Tankers	2,887	4,935	4,631	2,048	44.2	55.8
Bulk Carriers	2,375	4,839	2,960	2,464	83.2	16.8
Freighters	1,623	1,437	380	(186)	0.0*	100.0*
			W. Germany			
Total Vessels	11,697	13,453	7,246	1,756	24.2	75.8
Tankers	2,956	5,627	3,265	2,371	72.6	27.4
Bulk Carriers	2,859	3,993	2,178	1,134	52.0	48.0
Freighters	5,854	3,822	1,723	(2,032)	0.0*	100.0*
			France			
Total Vessels	9,007	17,690	11,058	8,683	78.5	21.5
Tankers	5,799	13,190	7,318	7,391	100.0	0.0
Bulk Carriers	1,240	2,405	1,486	1,165	78.3	21.7
Freighters	1,852	2,062	649	210	32.3	67.7
			World			
Total Vessels	326,999	556,572	254,825	229,573	90.1	9.9
Tankers	153,075	302,217	157,076	149,142	94.9	5.1
Bulk Carriers	77,173	150,080	73,488	72,907	99.2	0.8
Freighters	92,355	101,248	24,034	8,893	37.0	63.0

*All new deliveries were used to replace vessels deleted from the 1970 fleet.

Source: New Ship Construction, Maritime Administration, U.S. Department of Commerce.

The diversification of fleets was also a proven support in the recent recession. Government programs requiring consolidation of different types of vessels will probably be seriously considered in the coming decade. The resilience of the Japanese and Swedish fleets, in comparison with the poor condition of some sectors of the Norwegian fleet, exemplifies the benefits of owners having diversified operations.

Nearly all the nations studied faced serious challenges to the competitive positions of their fleets. Primarily citing high labor costs, owners have asked for and received consideration and permission to "flag abroad", charter, or otherwise move some portion of operations to nations under whose flags lower costs may be incurred. This raises issues of domestic employment, the balance of payments on maritime services, and national strategic issues on the one hand, and the competitiveness of export goods and the landed cost of vital imports on the other. Recent balances between offshore and home fleet operations have been developed in Japan, while the U.K.'s use of free depreciation has attracted U.K. operators back to the home flag. The governments of developed nations with key interests in cross trading have recently eased restrictions on joint ventures abroad so as to ensure the continued utilization of their fleets in cross trades.

While the use of indirect aids has generally proven effective in extending benefits to fleets, the use of direct aids to shipbuilders has become increasingly common. The transition of the shipbuilding environment from one of over-demand, where relatively high cost yards could attract the orders in excess of Japanese capacity or delivery requirements, to one of overcapacity, in which high cost producers are unable to be competitive even with large differential subsidies, has impaired the effectiveness of any aid to the shipbuilding industry. Given the inability of even extensive subsidies to keep yards occupied, restrictions on aid to owners ordering abroad and increased export programs to facilitate the financing of export orders will see development in the coming decade. Assistance to Less Developed Countries and emerging national fleets and shipbuilding industries have also become areas of increased interest for developed nations.

Aids to shipbuilding will include programs that help to finance an increase in productivity so as to improve areas of potential competitiveness. Future aids will help finance improved methods of construction so as to reduce labor inputs and to produce sophisticated vessels in which labor inputs constitute a lower share of added value. LNG, LPG, Roll-on/Roll-off, container, chemical, heavy-lift and other specialized vessel types will be supported by directed maritime aid benefits such as France's equipment grants and Norway's selected accelerated depreciation schedules.

The recent nationalization of two of the six shipbuilding industries studied marks the importance of shipbuilding to national economies and its vulnerability in developed countries to changes in demand and competition. The benefits that a nation derives from the industry are significant, but equally significant are the costs required to support its continued survival. The significance of shipbuilding has not precluded radical and lasting cuts in capacity under Sweden's nationalization while the Japanese seek to vary output within the existing capacity in order to preserve its potential for future markets. These very different reactions to a similar situation emphasize the congruity of government actions to national needs and expectation. Maritime aids will continue to reflect these national considerations and the impact of international developments upon them.

The years since 1970 have pointed to the importance of anticipation and recognition of developments in the marine industries. With the continuation of shipyard overcapacity demanding resolution and the prospects of unilateral and bilateral cargo preference codes increasing, the maritime aids of the developed nations will play an even greater role.

2. Trends in Aids to National Fleets

The three largest fleet operators have supported their fleets in three distinctly different ways. Japan, with the largest fleet, utilized extensive investment financing assistance during the 1960s. The U.K. fleet expanded rapidly in the 1970s as the result of heavy expenditures through a grant program. The Norwegian fleet benefited primarily through indirect tax allowance programs. The three other study nation fleets benefited primarily from indirect tax allowances (Sweden) and equipment grants (Germany and France), and interest subsidies (France).

Over the study period, Japan has de-emphasized investment financing assistance and increased the availability of tax allowances. The initial use of investment financing fostered a rapid growth of the Japanese fleet. As lower growth objectives were established for the Japanese flag, tax allowances have provided cash flows for financial stability and incentives for vessel replacement.

As the growth of the Japanese fleet slowed, the country's shipping industry created an offshore fleet that grew to equal the size of the national fleet. This fleet benefited from Japan's shipyard export aids and provided the Japanese with the benefits of lower cost crews. Both fleets serve the interests of national trade since they are primarily employed in Japan's foreign trade.

Current problems facing Japanese owners include invasion of their trade routes by the Soviet fleet and continuing increases in crew costs. Owners have recently called for free depreciation, similar to that offered in the United Kingdom; government support of fleet modernization; and resistance to Comecon conference undercutting.

The U.K. cash investment grant program provided extensive contributions during the study period but has now been phased out. A relative shift to depreciation allowances took place over the study period. The effectiveness of this type of program in periods of low profitability is reduced. Investment guarantees have been utilized to support operators, particularly those hurt by the tanker overcapacity situation.

Norway's program has continued to rely on tax allowances. However, recently Norway has had a requirement for investment guarantees to support the investment of owners in highly exposed financial situations. The lessened utility of tax allowances for low profit operators, combined with continuing increases in wage costs has led to a potential expansion of Norwegian operators into other flags. This expansion has been closely controlled, however, and currently is aimed at situations involving cargo preferences from which Norwegian owners might lose their third flag share of existing markets. Norway has also increased the tax allowances for home constructions in an effort to provide support to the shipbuilding industry.

Sweden, like Norway, has continued to emphasize tax allowances, which in general have brought financial stability to the fleet. The more diversified Swedish operators have not as yet required the guarantees provided to selected Norwegian owners.

As in Norway, wage costs in Sweden have precipitated a potential shift in policy concerning offshore fleets. A test case of this issue has granted shipowners permission to "flag abroad", provided they are granted special allowance and a new Swedish vessel with a similar number of berths is ordered.

West Germany has continued to increase its grants for shipbuilding and temporarily added a special program for VLCCs that has since been cancelled. The country is also maintaining its use of tax allowance programs. The broadening of shipbuilding credits to domestic owners represents an increase in investment financing assistance to West German owners.

The French construction subsidy program has been expanded over the study period and is forecast to greatly increase under Program VII, the current national plan. This represents the most significant change in French assistance programs. Government ownership of two major shipping lines, which has been consolidated recently into a single company, is not forecast to increase.

3. Trends in Aids to Shipbuilding

The recession in world shipbuilding demand during the study period 1971-1975 precipitated the nationalization of both Sweden's and the United Kingdom's shipbuilding industries in 1977. Sweden, a shipbuilding nation, and the United Kingdom, a fleet operating nation, both were required to ultimately take over their shipbuilding industries to preserve employment and inject the funds necessary for survival.

While Japan, the largest shipbuilder of the three shipbuilding study nations benefited from a large domestic market and extensive export credit assistance, Sweden, with neither the domestic industry nor domestic capital markets, primarily utilized state guarantees to finance the export credits required by its industry. West Germany, with large domestic capital markets, has provided the shipbuilding industry export assistance in the form of low interest loans and interest subsidies.

Japan has relied primarily on credit assistance, but over the study period both the Japan Development Bank and the Export-Import Bank financing were reduced. Export-Import Bank budgets have recently been increased to support expanded demand for deferred credit. Export-Import Bank financing has also been recently utilized to assist in the market diversification efforts of the integrated Japanese shipbuilding companies.

During the study period, Japan instituted a special tax allowance program to minimize the effects of revaluation losses. With the exception of the recent increase in Export-Import Bank credit, Japan has generally decreased its assistance to shipbuilders. All other countries have been forced to increase their assistance programs in attempts to narrow the price differentials between European yards and Japanese and South Korean shipyards.

Sweden maintained its use of credit guarantees as the primary support to shipbuilding over the study period. However, the financial instability resulting from currency realignments and the limited market for the principal Swedish vessel types have required Sweden to turn to nationalization, greatly expanded guarantees, and several program elements which potentially will result in government subsidization of construction costs. West Germany's assistance to shipbuilders has remained primarily in the area of increasing credit assistance.

In the fleet-dominated countries (United Kingdom and Norway), a large proportion of the shipbuilding output has gone to the national flag fleets, with relatively little direct assistance. Both countries have chosen to attract and not specify domestic construction for their home fleets and have increased programs aimed at expanding exports. The United Kingdom shipbuilding industry was nationalized in July 1977. In conjunction with the nationalization, the British assistance programs were expanded to include inflation insurance, government guarantees prior to natioanlization, and direct subsidies in support of contracts for LDCs and more recently domestic operators. Norway has also expanded subsidies for LDCs and has made domestic construction more attractive. Both countries have planned for reductions in shipbuilding capacity.

France, which reduced its reliance on the national fleet at great cost, has also provided support to export markets. The French shipbuilding program effectively shifted from direct construction subsidies to the extensive funding of inflation costs over the base study period. By mid-1977 the likelihood of direct French subsidies for larger shipyard domestic orders and smaller shipyard export orders was under serious consideration. These aids would replace the costly French inflation insurance that has lost much of its effectiveness.

B. SUMMARY OF THE EFFECTIVENESS OF MARITIME AIDS EMPLOYED BY THE SIX MAJOR MARITIME NATIONS 1971-1975

1. The Effectiveness of Aids to National Fleets

Total assistance to national fleets has been variable and is forecast to decrease in all countries but France (see Exhibit I-1). The three largest fleet operators (Japan, United Kingdom and Norway) provided average levels of assistance in excess of $200 million annually. In France and the United Kingdom, countries supporting the objective of fleet expansion, levels of assistance averaged in excess of 9 percent of revenue (see Exhibit I-2). In contrast, Germany sought fleet modernization through the replacement of tonnage, and this objective was supported by aids representing 4.3 percent of revenues. Fleet replacement and growth of the six major maritime nations was summarized in Exhibit I-3. Highlighting national fleet objectives, the exhibit also reveals the differences between freighter, liquid and dry bulk carrier procurement. While the freighter fleets of Japan, United Kingdom, Sweden and West Germany contracted as they were modernized, the freighter fleets of Norway and France expanded consistent with program objectives. France's fleet growth objectives complemented the strategic objective of increased control of bulk raw material supply and resulted in net growth in the bulk sectors. West German tanker additions and French liquid and dry bulk fleet expansion were the results of government policy and aid programs.

Overall, the six study nations tended to emphasize replacement of liquid and dry bulk vessels at rates in excess of world trends and their replacement of freighter tonnage was a significant departure from the world trend of limited expansion.

The importance of vessel replacement to the six study nations was a direct result of their need to increase competitiveness by advanced vessel technologies to counter increasing freighter competition manned by low-cost crews. Exhibit I-4 presents the average fleet age of the study nations' fleets. In Germany

Exhibit I-4

AVERAGE FLEET AGE IN YEARS

Fleet	1970	1971	1972	1973	1974	1975
Japan	9	7	7	6	7	7
United Kingdom	12	11	11	10	10	10
Norway	10	8	8	8	8	8
Sweden	11	9	9	8	8	8
Germany	11	10	9	6	7	7
France	12	11	11	10	10	10
World	17	13	13	12	12	12

Source: A Statistical Analysis of the World's Merchant Fleet, Maritime Administration, U.S. Department of Commerce.

tax allowances promoted vessel replacement and procurement in order to encourage an increase in German flag carriage of high value exports and bulk commodities. The young age of the German fleet reflects the effectiveness of these programs.

Exhibit I-5 illustrates the effectiveness of the study nations' aids in promoting the fleets' national flag share of national foreign trade. The fleets of the six maritime nations have generally maintained national flag shares of expanding foreign trade, with the exception of West Germany and Japan's exports. These figures do not reflect adjustments for the chartered tonnage of Japanese operators and the equivalent activity of the French fleet.

The effectiveness of maritime aids as reflected in international maritime account balances is less evident. Japan's maritime balance is consistently negative despite the size of her modern and efficient fleet. This deficit is the result of payments to foreign-owned vessels on charter to the Japanese and is largely offset by the payments Japan's shipyards receive from abroad for the construction of these very same vessels.

The United Kingdom registered fleet shows large receipts and net foreign earnings, but the industry as a whole incurs significant outflows of cross trade earnings in payment of foreign-flag charter hires. The relationship of domestic shipbuilding capacity to the needs of the home fleets is a critical consideration in the United Kingdom, for her fleet requires tonnage greatly in excess of domestic production capacity. Thus an outflow of currency is required to purchase and charter the needed vessels from abroad.

Both the fleets of Norway and Sweden are engaged in extensive cross trade activities. Norway's fleet contributes one of the highest percentages of her nation's current accounts, even when the cost of vessel imports is considered. The Norwegian fleet is large relative to her population and thus the fleet and the aids employed to support it have been designed to foster activity in the cross trades and to minimize the use of foreign-flag tonnage. Sweden's fleet also earns extensive foreign exchange. Payments for offshore construction are less of a factor for Sweden.

Exhibit I-5

NATIONAL FLAG SHARE OF NATIONAL FOREIGN TRADE

(percent)

	1970	1971	1972	1973	1974	1975
Japan						
Imports	45	45	42	44	41	46[a]
Exports	39	37	29	27	24	23[a]
United Kingdom						
Imports	31	32	31	30	29	31
Exports	47	44	40	43	44	46
Norway						
Imports } Exports }	37	N/A	N/A	N/A	N/A	37
Exports		N/A	N/A	N/A	N/A	39
Sweden						
Imports	14	13	14	13	13	15
Exports	26	25	27	25	23	23
Germany						
Imports	25	23	21	17	15	18
Exports	39	37	34	28	25	27
France						
Imports	N/A	30	32	30	29	34[b]
Exports	N/A	23	25	22	23	24[b]

[a] Including chartered tonnage, Japanese operators in 1975 carried 74 percent of imports and 54 percent of exports.

[b] French fleet total carriage declined from the equivalent of 63 percent of France's foreign trade in 1970 to 60 percent in 1975.

Source: Exhibits II-14, III-11, IV-12, V-9, VI-7 and VII-13.

The maritime accounts of France and West Germany are both negative because of the relatively low participation of these countries' home fleet in national trade, and the fleets' high operating costs that reduce their ability to compete in cross trades. Although the German fleet was modernized, trade requirements have out-stripped its capacity. The French aid programs have contributed to the increased carriage of the fleet, particularly in crude oil deliveries to oil pipeline terminals in Northern Europe, where goals of equivalent carriage relative to domestic trade have been attained. Cross trade revenues offset much of the negative balance in France, however.

2. The Effectiveness of Aids to Shipbuilding

The programs of shipbuilding assistance have exhibited an even wider range of benefit levels than those provided to the national fleets. Noteworthy is the mere two percent of revenues provided to Japanese shipyards by government programs that include $100 million per year of investment financing assistance to Japanese operators. The equipment grant subsidies utilized by the United Kingdom and France significantly contributed to assistance levels of 14.6 and 24.1 percent of industry revenues. These ratios emphasize the high cost of grants to shipbuilding. (See Exhibit I-2.)

Shipbuilding assistance programs have resulted in expansion of productivity over the study period. Japanese output increased by 77 percent between 1970 and 1974, and has held steady throughout the remainder of the study period as shown in Exhibit I-6. France recorded the largest increase in output which was a direct result of the 1976 delivery of several ultra-large tankers. Norway and Sweden recorded similar increases in capacity of 65 and 63 percent, respectively, which result from the countries' production-oriented shipyards and the yards' abilities to attract orders during the boom years preceding 1974. The aids of the United Kingdom were not sufficient to effect a major increase in shipyard production.

Exhibit I-6

SHIPYARD DELIVERIES
Indexed to 1970 = 100
(dwt basis)

	1970	1971	1972	1973	1974	1975	1976
Japan	100	110	129	152	177	177	172
United Kingdom	100	111	98	87	114	120	118
Norway	100	128	122	165	136	154	112
Sweden	100	98	109	127	125	127	163
W. Germany	100	138	80	119	176	188	154
France	100	134	119	150	145	136	197

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

Aids for shipbuilding, in general, have not been able to stimulate sufficient demand for vessels to maintain national shipyard output. Exhibit I-7 records the net additions to national orderbooks for the 1974-1976 period and presents 1975 production. Only France attracted net orders over this three year period equivalent to one year's production at 1975 levels. Norway suffered from massive tanker cancellations in 1975 and Japan experienced similar backlog erosion in 1976.

Norway's creation of the Norwegian Guarantee Institute to alleviate liquidity pressures on owners of tankers and drilling rigs was a well designed aid indirectly benefiting shipyards. Created in December 1975, the Institute was founded too late to stem that year's cancellation of vessel orders, which would have represented two years of work for Norwegian shipyards.

The maritime aids employed during the study period were unable to increase shipyard performance to the levels that the industry could reduce its dependence on assistance programs. The world recession and the emergence of LDC and Comecon shipbuilding capabilities have increased the problems faced by the six study nations' shipyards, as the six country share of orders outstanding fell from 71 percent of world orders to 54 percent, and production of the six fell from 77 percent to 75 percent of world output between 1974 and 1976.

Exhibit I-7

NET ADDITIONS TO NATIONAL SHIPYARD ORDERBOOKS

1974-1975

(million dwt)

	1974	1975	1976	1975 Deliveries
Japan	23.5	9.9	(10.9)	31.3
United Kingdom	1.3	1.5	(.7)	2.3
Norway	.5	(3.4)	(.2)	1.8
Sweden	2.9	(.8)	(.5)	4.3
West Germany	2.9	(.9)	(1.1)	4.1
France	2.4	(.6)	.2	1.9

NOTE: Negative numbers denote years in which cancellations exceeded orders for new ships.

Source: New Shipyard Construction, Maritime Administration, U.S. Department of Commerce.

C. SUMMARY OF MARITIME AIDS EMPLOYED BY THE SIX MAJOR MARITIME NATIONS 1971-1975

1. Overview

Exhibits I-8 and I-9 summarize the level of benefits by country provided under each of the seven categories of aid programs to the shipping and shipbuilding industries, respectively. It should be recalled that the benefits shown for a particular category are frequently the sum of several principal programs in a given country. This summary chapter cannot address the specifics of each program for each industry in each country. Therefore, while the maritime aids are discussed in this section by category or type of assistance, reference to the discussion in the chapter on each country should be made for program specifics.

For each category of assistance, Exhibits I-8 and I-9 show the average annual benefit provided to each industry. They also illustrate the range of benefit levels, that is, the highest and lowest annual amount observed over the 1971-1975 study period, and the observed trend in the level of benefits for the five year base study period. The term variable is frequently used to describe the trend. The variable trends observed resulted from several factors. First, the level of benefits of many assistance programs is related to the level of activity in the shipping world, and many program benefits decreased in 1974 or 1975 after rising during the early part of the study period. In other instances, two programs within a category may have opposing trends which cause the category sum to move in a variable pattern. Third, special programs instituted for a year or two introduce a sporadic element into the observed trends.

The figures in Exhibits I-8 and I-9 are absolute levels of benefits in millions of dollars. Section I.B. discussed the levels of total assistance relative to revenue levels for the shipping and shipbuilding industries in each country. Exhibits I-8A and I-9A graphically present the average annual benefits to the two industries by category of assistance.

Exhibit I-8

SUMMARY OF BENEFITS OF PRINCIPAL ASSISTANCE PROGRAMS TO THE NATIONAL FLEET

1971-1975

(millions of dollars)

	Investment Financing Assistance	Credit Assistance	Tax Allowances	Direct Subsidies	Preference Programs	Government Ownership	Other	Total[a]
				Japan				
Average	101	Not Applicable to National Fleets	83	Minor Coastal Operating Subsidies				208
Range	90 - 106		0 - 167					104 - 357
Trend	Level		Variable					Variable
Forecast	Decrease		Decrease					Decrease
				United Kingdom				
Average	28	"	101	191				320
Range	24 - 38		73 - 120	94 - 254				234 - 381
Trend	Increasing		Variable	Decreasing				Variable
Forecast	Increase		Decrease	Decrease				Decrease
				Norway				
Average	New Program	"	269	Coastal Subsidies Not Included in Total				269
Range			198 - 333					198 - 333
Trend			Variable					Variable
Forecast	Increase		Decrease					Decrease
				Sweden				
Average	4	"	125		Cabotage Only			128
Range	3 - 4		35 - 296					39 - 300
Trend	Increasing		Variable					Variable
Forecast	Increase		Decrease					Decrease
				West Germany				
Average	2	"	32	64	Cabotage Only			99
Range	2 - 3		32 - 32	22 - 110				56 - 145
Trend	Increase		Level	Variable				Variable
Forecast	Increase		Decrease	Decrease				Decrease
				France				
Average	64	"	36	21	Cargo Preference and Cabotage	Cost Data Not Available		121
Range	64 - 64		35 - 37	6 - 42				107 - 142
Trend	Level		Level	Increasing				Increasing
Forecast	Decrease		Decrease	Increase				Increase

[a] Totals are derived from the annual sums, not the sums of the averages and ranges shown.

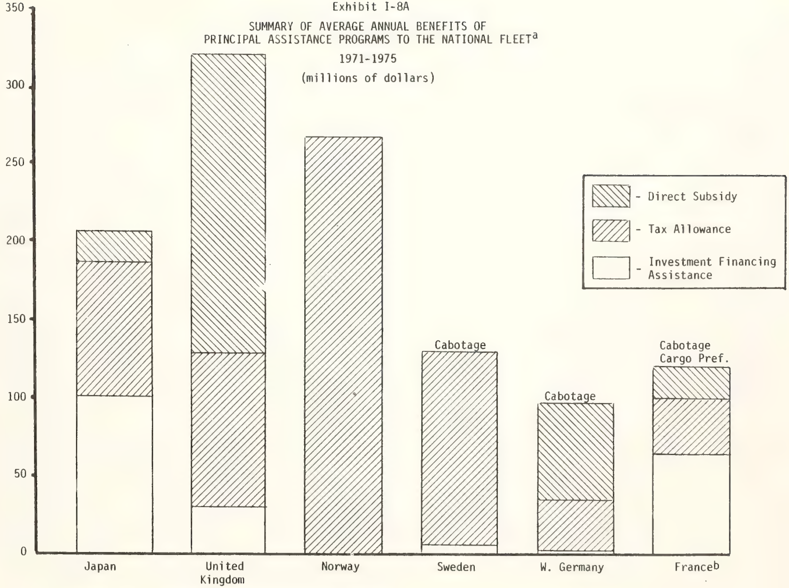
Source: Exhibits II-14, III-11, IV-12, V-9, VI-7, and VII-13.

Exhibit I-8A

SUMMARY OF AVERAGE ANNUAL BENEFITS OF PRINCIPAL ASSISTANCE PROGRAMS TO THE NATIONAL FLEET[a]

1971-1975

(millions of dollars)



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[a] Composition is derived from averages and are rounded.

[b] The cost of French government participation in shipping companies is not available.

Source: Exhibit I-8.

Exhibit I-9

SUMMARY OF BENEFITS OF PRINCIPAL ASSISTANCE PROGRAMS TO THE SHIPBUILDING INDUSTRY

1971-1975

(millions of dollars)

	Investment Financing Assistance	Credit Assistance	Tax Allowances	Direct Subsidies	Preference Programs	Government Ownership	Other	Total[a]
				Japan				
Average	1	51	33				3	88
Range	0.5 - 2	46 - 53	20 - 40				3 - 3	76 - 98
Trend	Variable	Decreasing	Variable				Level	Variable
Forecast	Decrease	Increase	Decrease				Level	Decrease
				United Kingdom				
Average	24	7	10	27		Included under Inv. Fin. Asst.	2	69
Range	24 - 24	5 - 9	9 - 11	9 - 42			2 - 2	54 - 85
Trend	Level	Increasing	Increasing	Variable			Level	Variable
Forecast	Decrease	Increase	Decrease	Increase		Increase	Level	Increase
				Norway				
Average		6	35					40
Range		5 - 9	27 - 46					32 - 56
Trend		Increasing	Increasing					Increasing
Forecast		Increase	Decrease					Increase
				Sweden				
Average		20	9	New Program		4	Minimal	33
Range		13 - 31	3 - 24			0 - 15		22 - 51
Trend		Increasing	Variable			Variable		Variable
Forecast		Increase	Decrease	Increase		Increase		Increase
				West Germany				
Average	3	53	2			One Large Company, Cost Data Not Available	1	61
Range	3 - 3	34 - 66	0.4 - 4				1 - 1	39 - 78
Trend	Level	Increasing	Variable				Level	Increasing
Forecast	Decrease	Increase	Decrease				Level	Increase
				France				
Average		35		31			113	179
Range		35 - 35		26 - 36			47 - 179	118 - 239
Trend		Level		Decreasing			Increasing	Increasing
Forecast		Decrease		Increase			Decrease	Decrease

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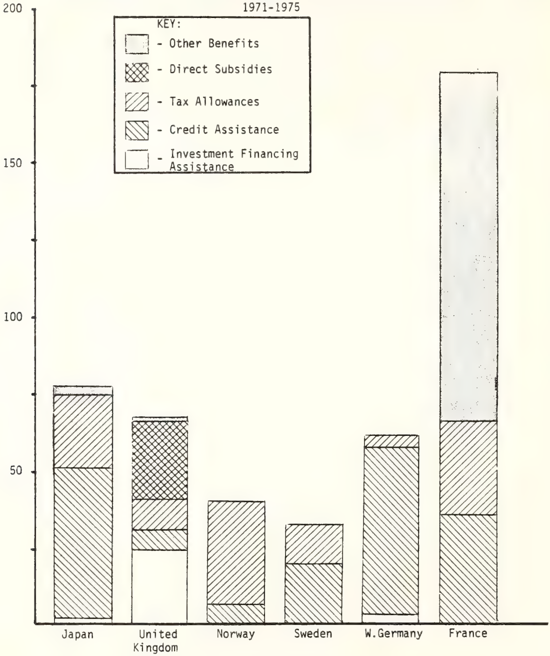
[a] Totals are derived from the annual sums, not the sums of the averages and ranges shown.

Source: Exhibits II-23, III-24, IV-16, V-15, VI-18, and VII-22.

I-24

Exhibit I-9A

SUMMARY OF AVERAGE ANNUAL BENEFITS
OF PRINCIPAL ASSISTANCE PROGRAMS TO THE SHIPBUILDING INDUSTRY[a]
1971-1975



[a] Composition is derived from averages and are rounded.

[b] U.K. Investment Financing includes government ownership.

[c] French aid included in Other Benefits is primarily inflation insurance.

Source: Exhibit I-9.

2. Summary of Aids to National Fleets

The six maritime nations have developed direct and indirect assistance programs to advance various goals including fleet growth or modernization, control of national trade, employment, and foreign currency earnings. The principal quantifiable forms of assistance are investment financing assistance, tax allowances, and direct subsidies. (See Exhibit I-8.)

(i) Investment Financing Assistance

Investment financing assistance has included the provision of low interest loans, interest subsidies and loan guarantees. The programs may result in shipowners benefiting from lower interest rates in the financial markets. Such assistance usually is intended to benefit the domestic shipbuilding industry as well. Frequently programs for domestic owners include longer repayment schedules and grace periods on interest or both interest and amortization.

In Japan and France, investment financing assistance for ship operators has been used extensively. The Japanese utilized four complementary programs to develop and renew various segments of the merchant fleet. In 1970, the Japan Development Bank (JDB) participated in 75 percent of all Japanese ships constructed, but due to increasingly restrictive requirements for owner equity participation and requirements for charters, the use of JDB loans decreased and the program funded only 36 percent of all Japanese fleet orders in 1975. The JDB also provided assistance for the scrapping and replacement of older tonnage, and interest subsidies on both JDB and non-JDB loans. Reconstruction of the coastal fleet was aided by Maritime Credit Corporation financing. The relative strength of Japanese capital markets combined with the concentration of six core shipping lines afforded Japan effective financing at home. The relative strength of the yen and the efficiency and price competitiveness of Japanese shipyards eliminated any need for Japanese owners to construct and finance abroad. The French investment financing assistance has principally been through interest subsidies provided on the financing of new vessels.

The size of Sweden's capital markets has forced owners to finance vessels out of earnings and has limited government investment financing assistance to government guarantees on special bank funds for ship mortgage loans. Although Germany's capital markets are far more developed, investment finance assistance to shipowners has been limited to small amounts of post-war recovery funds. Currently, such programs are expected to increase in importance in both nations as a means to stimulate shipbuilding demand.

In Norway, as in Sweden, limited capital markets minimized the role of financing assistance and maximized the use of other aids.. The government of Norway did attempt to alleviate the liquidity erosion of certain Norwegian shipping firms in the wake of the tanker crisis by creating and funding the Norwegian Guarantee Institute (NGI) in December 1975. With its mandate to support owners of tankers and drilling vessels jeopardized because of decreased earnings and high debt requirements, the NGI provides funding sufficient to permit owners to meet variable costs and serve the interest due on their outstanding loans.

(ii) Credit Assistance is Not Applicable to National Fleet Operators

(iii) Tax Allowance Programs

These programs are the most broadly used form of assistance given to shipowners. In Japan, U.K., West Germany and France, they represent approximately 30 percent of the average assistance provided. In Norway and Sweden they have been virtually the sole form of assistance to the national fleets.

Tax allowance programs are mostly indirect aids in the form of depreciation allowances and tax free reserves. They also include tax exemptions, tax credits, low tax rates, and special reimbursement of certain taxes.

Because the majority of the benefits from these programs are derived from depreciation allowances and reserves, their use is a function of both activity levels and profitability. With new ship construction and profitability levels forecast to decrease, the future benefits from these programs will be reduced in all of the study countries. However, these programs provide large cash flows and support the establishment of large reserves during periods of high profitability and through the high levels of liquidity achieved and long loss carry forwards, indirectly provide benefits during shipping recessions.

As mentioned, Norway and Sweden have extended owners an array of tax related aids primarily through accelerated depreciation allowances on new construction and deferred tax liability on the capital gains resulting from the sale of vessels. Given limited availability of capital necessary for fleet renewal and expansion, the Scandinavian countries have thus aided shipowners in the formation and retention of capital at only a deferred cost to the nation. As the major portions of maritime aid, tax reserves and depreciation allowances in Norway and Sweden facilitated fleet additions of 26.6 and 11.2 million deadweight tons respectively, at costs per deadweight ton of $47 per ton in Norway and $46 per ton in Sweden. The Swedish tax allowances include a significant benefit from an investment tax credit affecting deliveries between 1972 and 1974. West Germany also employed a temporary tax credit which affected vessels delivered after the base study period. Germany's goal of increased competitiveness through fleet modernization was supported by a program providing tax deferral capital gains provisions combined with direct subsidies which totaled $68 for each of the 7.25 million deadweight tons added.

The above figures approximate the effect of indirect tax deferral and depreciation benefits. Precise figures cannot be derived due to other factors including additional aids, currency valuations, etc. The deferral of government income through such programs is, however, an apparently lower cost than the expenditures required at the time of vessel construction. Recently, Norway has increased depreciation allowances for domestic construction to support shipyard activity and employment.

Governments can also utilize these aids to help stimulate fleet growth or replacement. The United Kingdom does not extend owners tax deferral on ship sales and while France employs only a 10 percent tax on capital gains, the tax is payable upon conclusion of the ship sale, with no deferral. Both nations, thereby, effectively discouraged vessel replacement and emphasized growth. The U.K. and France occupied fifth and sixth places respectively in percent of deliveries for replacement, among the six study nations.

The United Kingdom not only discouraged vessel replacement by not deferring capital gains taxes, but it has actively sought to attract new ships to the U.K. fleet through free depreciation. This program commenced in 1965 but only in the early 1970s did it become an effective stimulus for capital investment and an alternative to the costly grants and subsidies that were straining government funds. One effect of the depreciation plan was the entrance of banks into shipowning. The banks sought tax shelters through the depreciation and extended the benefits to U.K. ship operators through favorable terms on charters and leases.

Germany extended a different form of tax benefit to encourage cross trading through reduced taxes on foreign earnings. Confronted by high manning costs and the need to aid the home fleet and reduce owner demands for "flagging out" tonnage, the governments of Norway, Sweden and France have underwritten various taxes, fringe and social benefit costs of seamen. Such programs have not resulted in lower wage costs.

Japan's use of tax allowance programs increased during the study period. Depreciation allowances were liberalized and reserves established for gains from second hand sales. Increases in the special depreciation accounts and reserves provided large cash flow increases to Japanese operators during 1973 and 1974.

Japanese operators have requested a further liberalization of tax allowances. A free depreciation, similar to that employed in the United Kingdom, would allow the Japanese operators to shelter the large profits earned in 1976 and reduce the potential of those profits and the reintroduction of special depreciation allowances to trigger the repayment provisions on interest subsidies.

(iv) Direct Subsidies

In the United Kingdom, West Germany and France, the principal direct subsidy programs for national fleets have been equipment grant programs. Although all grants did not restrict the benefits to domestic construction, German shipyards point to the utilization of loopholes by owners for constructions abroad and U.K. builders expected a larger volume of orders than they received. The acquisition of the French fleet was more closely controlled.

The construction grants in the United Kingdom were eliminated in 1971 for reasons of cost, but payments on orders delivered throughout the study period amounted to more than $1 billion and constituted the largest benefit to the fleet. West Germany utilized grants throughout the study period, including a short-lived supplemental VLCC program. Consisting of subsidies on 10 percent to 12.5 percent of vessel cost, the non-VLCC programs expended $199.5 million between 1971 and 1975 for the construction of 158 ships of 2.32m grt, (approximately 3.8m dwt), or approximately $50/dwt. The German subsidy grant program will continue at a reduced level without the VLCC funds but has been increased to 17.5 percent of new orders.

The French equipment grants were designed under Plan VI in 1971 to direct shipowners from general cargo tonnage towards high speed liners, containerships, roll-on/roll-off tonnage, and product and bulk tankers through selectively scaled grants. Plan VII in 1976 adjusted the Plan VI selective subsidies for current world conditions and maximal effectiveness, with subsidies of up to 15 percent for container and Ro/Ro vessels and only 2 percent for bulk carriers larger than Panamax size.

Not surprisingly, capital-short Sweden and Norway relied on tax deferrals and accelerated depreciation to stimulate fleet modernization and expansion and have not employed direct grants. Norway's support of coastal services took the form of a subsidy of ferry operations and short-haul cargo transportation. A similar program exists in Japan.

(v) *Preference Programs*

Cabotage protection is utilized by several countries. Coastal preference assistance has not been quantified in this study. France employs an oil preference program in the foreign trade, which has achieved its goals, if cross trade activities are included.

(vi) *Government Ownership*

The French government owns the majority shares in two large shipping lines through a wholly owned holding company. No government cost data are available on this program. The lines are operated as private companies.

(vii) *Other*

No principal programs were identified other than those discussed in the previous sections.

3. Summary of Aids to Shipbuilding

Assistance to the shipbuilding industry encompassed a broader range of programs than those for the shipping industry. The dominant category of assistance used in the largest shipbuilding countries (Japan, Sweden and Germany) was credit assistance. To stimulate ship orders and ensure the competitiveness of home yards, the United Kingdom and France introduced direct subsidies, supplemented and largely replaced by inflation protection in France and by investment financing assistance in the U.K. Norway employed a customs tax rebate program which was based on the sale price of new vessels. Because few shipbuilding materials are subject to taxes, the rebate may be considered a form of subsidy. A summary of aids to the shipbuilding industry by category appears in Exhibit I-9.

The acceptance of OECD export credit guidelines by the developed shipbuilding nations has resulted in increased emphasis on credit assistance that provides customers OECD financial terms. Costly construction subsidy programs have been eliminated for export orders and used more sparingly for domestic orders.

(i) Investment Financing Assistance

During the 1960s Japan's shipbuilding industry was given high priority and underwent enormous expansion with the Japan Development Bank and the city banks participating in shipyard facility development and modernization. Although JDB participation amounted to only 7 percent of the $2.1 billion expended from 1970-1975 by Japanese yards, its participation is considered important in obtaining commercial financing.

For ten years preceding its nationalization on July 1, 1977 of 40 shipyards and engine builders, the United Kingdom provided investment financing assistance to the industry, including the injection of funds for equity grants and low interest loans. The Shipbuilding Industry Act of 1967 and its successor, the Industry Act of 1972, provided the basis for such assistance.

Because the majority of funds went to yards partly or wholly government-owned, much of this assistance could be considered government ownership. A portion of the assistance was directed to privately owned shipyards and thus can be classified as investment assistance to the industry. During the study period, $240 million in loans for improvement were extended to various yards.

European Recovery Plan (ERP) funds supported a relatively small amount of investment by West German shipyards.

(ii) Credit Assistance

Credit assistance extended to shipyards and owners to reduce the financing costs of ship production through government provided or guaranteed credit, supported a significant levels of construction value in several countries.

The Japanese Development Bank (JDB) financing provided to the Japanese fleet benefited Japanese shipyards because all Japanese flag tonnage was built in domestic shipyards. Export-Import Bank financing permitted Japanese yards to extend competitive supplier credits to export customers, including vessels ordered by Japan's expanding offshore charter fleet. Current Export-Import Bank participation in non-ship constructions by Japanese yards is providing additional support to the Japanese shipbuilding industry.

Faced by a declining share of world shipbuilding and the emergence of certain Less Developed Nations and former colonies as builders of general cargo and bulk tonnage, the government of the United Kingdom has guaranteed export orders at competitive terms. These loans have not been sufficiently attractive, however, to overcome the delivery date and pricing obstacles which have plagued the British shipyards.

The Norwegian government has participated in the financing of domestic and export orders via second mortgage financing and more recently through loans that covered an increasing percentage of a vessel's contract cost. This feature has served to counter the reduction in many ship types' market values and their value to banks as collateral. Credit assistance, as part of Norway's foreign aid programs to less developed countries, has recently been employed by Norway to obtain shipbuilding orders.

The shortage of domestic capital has necessitated Swedish government guarantees of loans in foreign currencies. As the world's second largest shipbuilder and ship exporter, these programs of export credits and guarantees played an important role in Sweden's specialization in tanker construction.

In 1977, the Swedish guarantee program was greatly increased and supports a larger percentage of the market value of new constructions, as well as speculative construction to occupy shipyards. Combined with these guarantees are funds to anticipate write-downs on the ultimate sale prices of the vessels and depreciating loans to Swedish shipowners, both of which have characteristics of direct subsidies.

German export construction has been supported by low interest loans and interest subsidies which provide competitive credit. The program has provided extensive funds over the study period, is forecast to increase, and has been broadened to include domestic owners to attract German orders into home yards.

French credit assistance has been primarily through interest subsidies.

(iii) Tax Allowances

Tax allowances are generally indirect assistance programs related to investments in shipyard facilities. The decline in the demand for larger ship types and the overcapacity of all major shipyards has decreased investments in shipyard equipment drastically.

As mentioned earlier, Norway has provided rebates on customs duties of 6 percent of new ship construction value and 4 percent of ship repair value. These reflect a subsidy as most ship-related materials are duty free. Sweden and West Germany have employed investment credit tax allowances, while the Japanese introduced a special tax allowance on losses resulting from the 1971 yen revaluation.

(iv) Direct Subsidies

Construction subsidies for export orders were essentially eliminated by 1974 in all six countries in accordance with the terms of the 1971 OECD agreement. The United Kingdom and France utilized such programs; France continued to use a 0.5 percent subsidy until 1976.

As France phased out construction subsidies over the study period, inflation guarantees were provided which have resulted in funding levels far in excess of the previous construction subsidies. France recently has reinstituted direct subsidies.

(v) *Preference Programs*

Customs duties and permits on vessel imports have been utilized in Japan and France, but have had little quantifiable effect. The regulations in both countries have been greatly liberalized or eliminated over the study period.

(vi) *Government Ownership*

The shipbuilding slump has ultimately led to the nationalization of British shipbuilding and all but one major yard in Sweden. The costs of nationalization in these countries are quite high and are discussed in greater detail in the respective country chapters.

(vii) *Other*

Other assistance programs, which have been quantified, primarily take the form of support of research and development activities. The French inflation program was referred to under direct subsidies. This program has been extremely expensive for France, but is forecast to decrease due to lower inflation rates and the raising of the minimum level of inflation covered.

D. RESPONSE OF THE SIX MAJOR MARITIME NATIONS TO WORLD MARINE OVERCAPACITY

1. Response to Shipping Overcapacity

The precipitous decline in the demand for the transport of oil after 1973 reduced not only the opportunities for tanker tonnage, but also the demand for bulk carrier and general cargo transport because of generally depressed world economies. Owners were afflicted by this shipping recession primarily in tanker operations and more recently as a result of excessive commitments for the construction of dry bulk tonnage.

In 1975, 50 percent of the Swedish tanker fleet was laid up. Despite the traditional strength of Swedish owners' liquidity positions, the need to honor ship financial commitments when tanker operations barely recovered variable costs strained owners' current accounts.

As in other developed nations, the current depression in shipping has permitted Swedish owners to win certain concessions from the government in the form of selected sales of vessels to foreign flags. These will increase competitiveness through charter back arrangements using low cost foreign crews.

The Norwegian government was required to aid owners much less diversified than those in Sweden. While tax deferrals and accelerated depreciation benefits had been designed to provide stability for owners in the cyclical liquid bulk sector, the serious decline in tanker demand threatened many owners. The creation of the Norwegian Guarantee Institute in late 1975 was a new and effective means to protect owners from the need to sell fleets in order to pay for them.

As a nation with a small population and small economic base relative to its fleet which depends upon successful cross-trading for its survival, Norway has begun to recognize the challenge of emerging national fleets and increased cargo preference and has been considering in recent years softened stands on foreign flag operations, joint ventures, and other competitive possibilities.

The remaining four nations have been less exposed to problems of tanker overcapacity and the general shipping depression for a variety of reasons. Japan's highly diversified fleet was engaged in long hauls of energy independent of the Suez Canal opening and its charter fleet could soften the brunt of reduced demand. Germany's highly efficient fleet of ships was buoyed by relatively strong export activity while the devaluations of the English pound, combined with efficient fleet management, aided U.K. vessels. The U.K. tanker fleet did suffer to some extent as smaller tankers with many berths for English seamen were withdrawn from service. The French merchant marine has been heavily deployed in the carriage of France's foreign trade. Thus, these four nations required little government intervention to meet the challenges presented to their shipping industries.

2. Response to Shipbuilding Overcapacity

The response of governments to the impending long-term overcapacity of the world's shipyards has been far more determined and concerted than in response to shipping overcapacity. Even if the six study nations were in agreement as to how domestic orders could have been apportioned, the capacity of centrally controlled Comecon (Polish and Yugoslavian) shipyards and the emerging Brazilian, South Korean and Taiwanese capabilities as well as those of other developed and less developed nations threatens their survival. The need of domestic merchant fleets to procure vessels at low costs to reduce the fixed portions of their cost structure provides another complicating factor. This need frequently runs counter to governmental hopes for home fleet construction in domestic yards.

Because of the recent boom in tanker construction, a vessel type with low-labor inputs per deadweight ton, the figures on deadweight production are not an accurate measure of the productivity of the workforce. In 1967 the Association of Western European Shipbuilders (AWES) and the Shipbuilders Association of Japan proposed the measure of the compensated ton, a surrogate gross ton assigning equivalent work value to the deadweight tonnage of various ship types. Each VLCC deadweight ton represents less than one-third the labor input of a standard cargo vessel deadweight ton, for example. A comparison of deadweight and compensated ton productivities for the six nations appears in Exhibit I-10 for the years 1970 and 1975.

The exhibit reveals the high productivity of Swedish and Japanese shipbuilders and the relatively lower productivities of the other four nations. Assuming the 30 percent reduction in man-hours worked Japan is committed to, the conversion of the orderbook to high labor content vessels could maintain 70 percent of the force on less than one-sixth the deadweight tonnage built in 1975. This fact explains why the Japanese would agree to limit themselves to 50 percent of the world's future orderbook on a compensated gross ton basis and why (AWES) representatives are adamantly opposed to such a proposal. In the first half of 1977 Japanese shipyards secured 66 percent of new ship orders representing a potential increase in share of the world's shipbuilding work for Japanese shipyards, despite the revaluation of the yen and a 5 percent price increase which the Japanese suggest have added some 15 percent to the cost of Japanese ships.

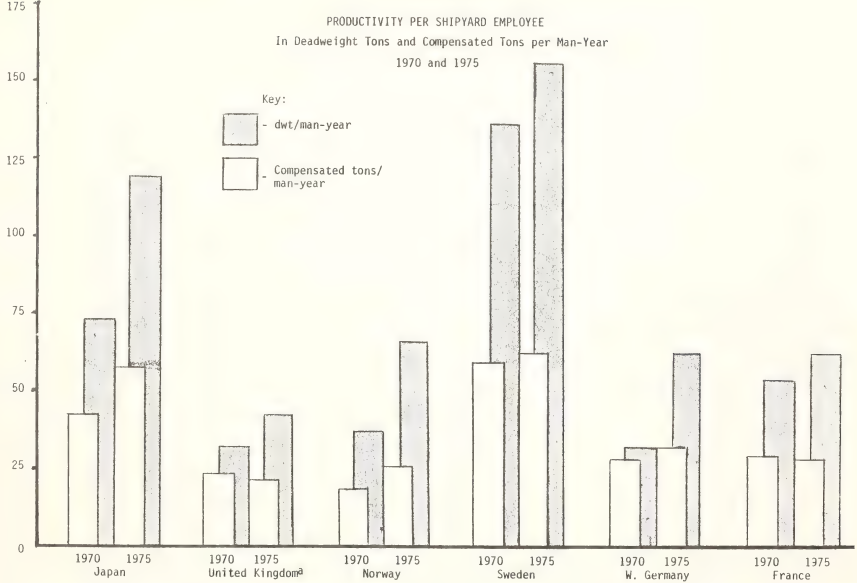
Sweden, the world's second largest shipbuilders, did not build a single freighter in 1974 or 1975, while its high labor cost forced it to compete within a narrow range of products and with intense investment in shipbuilding processes. Just as Norway failed to induce its owners to diversify their fleets, so did the Swedish government fail to learn from its shipowners the value of diversification and design aids and stimuli for all types of ship construction. Despite

Exhibit I-10

PRODUCTIVITY PER SHIPYARD EMPLOYEE

In Deadweight Tons and Compensated Tons per Man-Year

1970 and 1975



[a] Excludes 40 percent of total U.K. man-years expended on naval construction.

NOTE: Compensated tonnages calculated using Association of Western European Shipbuilders' compensation indices for average size freighter, tanker and bulk carrier produced.

Source: Exhibits II-23, III-24, IV-16, V-15, VI-18 and VII-22.

recent orders for smaller vessels, Sweden's major yards can still produce only bulk vessels efficiently; building small vessels in enormous shipyards is inefficient. As a result, the Swedish government has been required to stimulate the demand for ships artificially and speculatively. The government has also called for an initial cutback of 30 percent of production, 40 percent of employment and its takeover of all but one major yard has specific provisions for the selected abandonment of shipbuilding capacity.

France has specialized its industry by adding containerships, vehicle carriers, LPG, LNG, and other specialized tonnage to orderbooks. This specialization upset the coincidental but healthy balance between French shipping and shipbuilding, causing a divergence that has forced the shipyards to seek and become more dependent upon export orders. In late 1976 the French cabinet approved subsidies to domestic yards for domestic and export orders.

The German shipyards have employed a policy of restraint in investment in VLCC capacity and remaining diversified. While forgoing high profits in the boom years of tanker construction, the Germans did increase capacity and took some VLCC orders when orders were not sensitive to higher German prices. The current slump has reemphasized the high cost of German labor as the demand for smaller tonnage can be met by many low labor cost nations that have recently emerged as shipbuilders. Current credit assistance programs are aimed at bringing more German orders to domestic yards. Meanwhile, Germany plans to reduce output by 30 percent and has cut the shipyard work week by 10 percent.

The German government has increased its 12.5 percent subsidy to 17.5 percent to support domestic shipyards. Although OECD terms require Germany to supply such funds to German vessels built in any OECD country, the governments' intent is clearly to support the home yards. Given a 30 percent differential on price between German and Japanese yards, the subsidy cannot be expected to have any significant effect.

The Norwegian government has combined its expertise and experience in maritime affairs with offers to LDCs on extremely low foreign aid financial terms. The measure has served to generate small and large ship orders, contracts for entire fleet development, and the construction of ship repair and shipbuilding facilities, which will help occupy Norwegian shipyards. Relocation plans for displaced employees have also been drawn up. Norway's hold on significant outstanding LNG and LPG orders is another area where national experience may be sufficient to resist Japanese entrance to this market.

The takeover of the United Kingdom's shipyards and marine engineering firms by the government on July 1, 1977 was not the direct result of world shipbuilding overcapacity. Rather, the cancellation of numerous tanker orders only compounded the problems the government faced. After injecting equity, loans, equipment subsidies and modernization grants the government will now attempt to remold 40 establishments into a cohesive, profit-oriented industry capable of contributing to the British economy.

In contrast to Sweden, which plans to permanently reduce capacity by liquidating facilities, Japan has resisted all demands by the European shipbuilders to cut capacity and has only agreed to reduce man-hours by 30 percent. In addition to enforcing and overseeing the conduct of Japanese shipyards, the government has extended attractive Export-Import financing to alternative shipyard activities including plant constructions for non-shipping related industries. The Japanese face competition from South Korean and other LDC/Comecon shipyards that are characterized by their high efficiency and low labor costs. This competition maintains pressure on Japan to keep prices low.

Despite the above steps, the six shipbuilding industries, particularly of the countries other than Japan, have continued to lose ground to growing LDC/Comecon competition, increasing the probability of further expansion of assistance programs.

E. THE CURRENT AND FUTURE IMPACT OF COMECON, OPEC AND LDC MARITIME INDUSTRIES UPON THE MAJOR MARITIME NATIONS

1. Overview

The 1971-1975 period saw great change in the structure of the maritime world. Developments in developing nations seriously altered the prospects for the marine industries of the study nations. The major maritime nations have made very little response to the gravity of challenges posed by the socialistic and developing nations.

One reason for this limited response is the highly international nature of shipping and shipbuilding; another is the relative importance of diplomatic considerations. Shipbuilders have been forced to recognize that the competitiveness of national fleets may depend on their ability to procure lower cost vessels from foreign shipyards. Similarly, the shipping industry has been troubled by the Comecon entrants' increasing disruption of the liner conference system, the development of OPEC and LDC fleets, and the implications of cargo preference.

2. Comecon Maritime Activity

During the study period the fleets of major maritime nations were challenged by the competition of the Soviet merchant fleet. The Soviets have sought foreign currency and year-round trading opportunities free from ice-bound Russian ports. Both considerations led the Soviet fleet into cross trading operations. The years 1971 to 1975 witnessed the Soviets' continuing replacement of general cargo tonnage and semi-container vessels with sophisticated service-oriented vessels on many high traffic trade routes.

These Soviet activities have affected German and Swedish fleets serving the Baltic, Japanese and U.S. companies on trans-Pacific routes (particularly those engaged in container service), and most European fleets on trans-Atlantic dry cargo routes. In addition to these general cargo developments, the Soviet dry bulk fleet doubled in size (keeping pace with world dry bulk fleet growth) primarily to meet the requirement for grain imports. The tanker fleet grew at a slower rate in relation to those of the six nations studied and other maritime countries. Projections indicate major expansion of the Soviet tanker fleet and the further replacement of a substantial portion of its general cargo vessels with roll-on/roll-off, container and other specialized vessels.

The economic structure of the Soviet fleet makes it difficult to compare with those of Western operators. Similarly it is difficult to compare Soviet aid programs with those of Western nations. Depreciation, replacement costs and capital charges, as well as insurance expenses are not comparably reflected in Soviet freight rates. Fuel is purchased at pre-1973 oil embargo prices. Low manning costs and pooled shore support cost accounting also serve to support low Soviet freight rates.

The shipping industry of the West has pointed consistently to Soviet policies and cost advantages. Certain companies have joined or defected from liner conferences in reaction to Soviet non-conference operations. Western government support of the fleets has lacked cohesion, primarily because of diplomatic and general trade considerations. Sanctions against Soviet cross trading are not acceptable to leading cross trading nations such as Norway and Sweden. Thus, criticism and protests against specific Soviet tactics and policies would appear to be the likely extent of Western resistance until overall issues of cargo preferences are resolved.

The shipbuilding capacity of Poland is of similar significance to Western shipbuilders. Poland traditionally was the major supplier of tonnage to Russia, particularly when naval construction requirements occupied all efficient Soviet shipyards. Seeking foreign currency, Poland now is looking towards the major maritime nations' shipping companies for orders, competing on price and quality with modern methods, good designs, and low wages.

Poland secured 5.8 percent of 1975 ship orders, following only Japan and Brazil. The nation's shipbuilding annual production increased tenfold between 1965 and 1975 to one million dwt and will double again by 1985. This capacity could represent 6 percent of 1985 ship demand, as compared to Poland's supply of 1.7 percent of 1975 production. This past and projected performance represents the nation's major inroad into the six study nations' traditional shipbuilding markets. Short of government restrictions on orders in Comecon shipyards, this threat will continue.

3. OPEC Maritime Activity

In the future the maritime activity of OPEC and its powerful Arab component OAPEC will increase and impact more severely the rest of the maritime world. In an effort to meet their goals of increased control of oil shipments and energy industry vertical integration, OPEC nations have embarked upon the near-term expansion of crude oil tanker fleets. This step has been the subject of great concern to the world tanker industry. Realistic expansion by 1980 will not likely exceed 10 million dwt, however, representing a minimum short term expansion of the world's tanker supply.

Neither this short-term expansion nor longer-term goal of fleet growth will significantly alter the structure of the world tanker market. The OPEC nations are constrained by manpower, but also can take advantage of market mechanisms provided by oil company and independent tankers. Another OPEC consideration that limits crude oil tanker fleet development is the nature and extent of future national oil refinery and petrochemical capacity, which would require large procurements of product and chemical tonnage.

OPEC nations are also expanding their general cargo fleets, for reasons of cargo control and national interest. This expansion has already provided some orders for world shipyards and will continue to do so. OPEC liner operations to date have not detracted from the attractiveness of Mid-East liner routes to Western fleets. The long-term OPEC requirements for vessel construction may bring some orders to the shipyards of the study nations, but price competition and mutual interest will probably favor developing nations' shipyards.

4. LDC Maritime Activity

The four LDC study nations selected have demonstrated their ability to develop shipping and shipbuilding industries.

Brazil and Korea represent major shipbuilding powers. Both have successfully attracted domestic and export orders which otherwise would have been available to the six study nations. The combined orders of Brazil and Korea could represent 12 to 15 percent of the world's outstanding orders by 1980. Both nations' shipyards operate under unique government aid umbrellas. Brazil's centralized marine superintendency SUNAMAM manages nationally-oriented programs for fleet and shipbuilding development and coordination. The young Korean shipbuilding industry is dominated by a few large shipyards. Because of this domination, the Korean government, unlike the Japanese government, has not been required to protect small shipyard interests by restricting the transition of large yards into small ship construction.

The response of the study nations to these emerging shipbuilding powers has been limited, despite Korea's direct and fairly successful competition with Japan. The fact that their fleets required the low cost tonnage that nations like Korea and Brazil can supply is one reason for the lack of response from the study nations. As less developed countries, Korea and Brazil may offer more attractive financial terms for vessel orders than those of developed countries. This differential in financing terms is supported by international agreement.

Singapore has also developed her shipbuilding industry, but her significance lies in her expansion as a flag of convenience and ship repair center, which uses low-cost labor to compete directly with Japan. India has developed a large dry bulk fleet in addition to her general cargo fleet as a means of reducing a deficit maritime balance of payments. This step, combined with the development of shipyards to meet a greater share of home-fleet ship demand, has reduced India's dependence on world fleets and shipyards.

Overall, these challenges to the Western marine industry have been countered only by joint ventures, professional and management support, or marine-related foreign aid packages, exemplified by Norwegian efforts following the onset of the world shipbuilding recession. The ultimate effects, however, are yet to be felt by the six study nations. Decreasing shares of world shipbuilding orderbooks and increasing competition by OPEC and LDC fleets will necessarily force a further reshaping of assistance programs and industry structure.

II. THE MARITIME AIDS OF JAPAN

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II. THE MARITIME AIDS OF JAPAN

A. SUMMARY

1. Background

As of December 31, 1975, the Japanese national fleet was the largest fleet in the world with the single exception of Liberia, the principal flag of convenience. As shown in Exhibit II-1, the Japanese national fleet took delivery of 6.0 million gross tons in 1970 and 9.4 million gross tons in 1972 before deliveries declined in 1974 and 1975 to roughly half the 1972 level. All deliveries to the Japanese fleet during the period were built in Japanese shipyards.

At the same time the Japanese shipbuilding industry was unsurpassed in volume, delivering seven times the shipyard output of the next largest shipbuilding nation, Sweden. Originally developed to meet domestic demand, the shipbuilding industry's deliveries to the home fleet comprised between 34 and 41 percent of Japan's output between 1970 and 1972 and declined in relative importance in later years. As export production was emphasized and Japan's offshore chartered fleet expanded, Japanese flag deliveries declined to 14-16 percent by 1974 and 1975 and total shipyard output increased from 17.6 million gross tons in 1970 to 31.2 million gross tons in both 1974 and 1975. This increase in shipbuilding capacity contributed greatly to Japan's aggressive drive to secure a major share of world orders, competing on quality, service, delivery time and price.

The recession in world shipbuilding demand is expected to increase the importance of Japanese fleet orders. In 1976 deliveries to the home fleet comprised 21 percent of shipyard output but Japanese orders comprised 14 percent of the year-end orderbook reflecting continued emphasis by the Japanese on securing export orders.

Exhibit II-1

SUMMARY OF NATIONAL FLAG FLEET AND SHIPBUILDING ACTIVITY
1970-1975

JAPAN

	1970	1971	1972	1973	1974	1975
Total Deliveries - Japanese Shipyards						
Vessels	440	403	417	411	498	502
DWT (000)	17,602	19,318	22,756	26,892	31,283	31,250
GRT (000)	9,698	10,510	12,487	14,191	16,708	16,229
Deliveries for Japanese Registry from Japanese Shipyards						
Vessels	241	185	198	157	127	109
DWT (000)	6,013	7,166	9,406	8,141	4,430	4,846
GRT (000)	3,565	4,127	5,427	4,510	2,590	2,630
Deliveries for Japanese Registry from World Shipyards						
Vessels	241	185	198	157	127	109
DWT (000)	6,013	7,166	9,406	8,141	4,430	4,846
GRT (000)	3,565	4,127	5,427	4,510	2,590	2,630
Japanese Owners Share of Japanese Shipyard Deliveries (Percent)						
Vessels	55	46	47	38	26	22
DWT (000)	34	37	41	30	14	16
GRT (000)	37	39	43	32	16	16
Japanese Shipyards Share of Deliveries to Japanese Owners (Percent)						
Vessels	100	100	100	100	100	100
DWT (000)	100	100	100	100	100	100
GRT (000)	100	100	100	100	100	100

Source: New Ship Construction, U.S. Maritime Administration,
U.S. Department of Commerce, annual.

As shown in Exhibit II-2, the Japanese national flag fleet increased from 8.9 percent of the world's deadweight tonnage in 1966 to a peak level of 13.1 percent in 1972. Subsequently, the Japanese fleet's relative growth declined, and by the end of 1975 had fallen to 11.4 percent of the world's deadweight tonnage. As noted above, however, at the end of 1975 the Japanese fleet was still unsurpassed in size among non-convenience flag nations. The relative decline in the Japanese fleet is typical for industrialized nations with fleets engaged in home trades. The expansion of the fleet slows as market penetration peaks and highly efficient additions to the fleet carry the more slowly growing share of total national tonnage.

The increases in fleet size were accompanied by substantial reductions in average fleet age, but the average age of all segments of the Japanese fleet began to increase by 1974. A comparison of Japanese fleet procurement to world activity appears in Exhibit II-3.

In considering the effects of assistance programs on the Japanese national fleet, it is necessary that the chartered tonnage controlled by Japanese flag operators also be reviewed. Between 1970 and 1976, the gross tonnage of the Japanese flag fleet increased by 64 percent. Through 1973, the Japanese flag share of world tonnage had increased, but fell off in the succeeding years. However, as the relative growth of Japanese flag fleet slowed, the foreign-flag tonnage chartered to Japanese operators continued to increase rapidly as owners attempted to ensure competitiveness for Japanese cargos through low-cost foreign crews and the advantage of Japan ship export incentives available to foreign owners.

During the same six years, the gross tonnage chartered by Japanese operators increased by over 300 percent. By June 30, 1976, the chartered fleet represented 45 percent of the total fleet controlled by Japanese operators and was equivalent to 82 percent of the Japanese flag fleet, up from 33 percent in 1970 as shown in Exhibit II-4.

Exhibit II-2

JAPAN FLEET

SHARE OF WORLD FLEET AND AVERAGE AGE
1966-1975

	1966	1968	1970	1972	1974	1975
Vessels Registered Under Japan Flag Percent of World Fleet						
Total Fleet[1]	7.6	9.1	10.6	10.5	9.5	9.0
Tankers	7.3	7.8	8.7	9.5	10.2	10.0
Bulk Carriers	11.1	13.0	14.5	14.8	13.3	12.5
Freighters	7.6	9.2	10.8	10.1	8.4	7.6
Deadweight Tonnage Registered Under Japan Flag Percent of World Fleet						
Total Fleet[1]	8.9	10.7	12.0	13.1	12.0	11.4
Tankers	9.1	10.1	10.5	12.1	11.7	11.2
Bulk Carriers	12.3	14.7	17.2	17.9	15.2	14.2
Freighters	7.6	9.3	10.6	10.1	8.3	7.8
Japan Fleet - Average Age of Vessels (Years)						
Total Fleet[1]	9	7	7	6	7	7
Tankers	7	6	6	6	6	6
Bulk Carriers	6	13	5	5	6	6
Freighters	10	8	7	7	8	8
World Fleet - Average Age of Vessels (Years)						
Total Fleet[1]	17	13	13	12	12	12
Tankers	11	11	11	11	11	11
Bulk Carriers	11	14	8	8	9	9
Freighters	16	15	13	13	13	13

[1] Includes Combination Passenger/Cargo not shown separately.

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce, semi-annual.

Exhibit II-3

COMPARISON OF FLEET GROWTH - JAPAN AND WORLD

1970-1975

(deadweight tons in millions)

GROWTH IN REGISTERED FLEET

	Japan			World		
	Deadweight Tons		Percent Change	Deadweight Tons		Percent Change
	1970	1975		1970	1975	
Total Fleet	39.1	63.2	61.6	327.0	556.6	70.2
Tankers	16.0	34.0	112.5	153.1	302.2	97.4
Bulk Carriers	13.2	21.3	61.4	77.2	150.1	94.5
Freighters	9.8	7.9	(19.4)	92.4	101.2	9.6

NEWBUILDING DELIVERIES TO THE FLEET

1971-1975

	Japan		World	
	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT
Total Fleet	34.0	87.0%	254.8	77.9%
Tankers	20.1	125.6	157.1	102.6
Bulk Carriers	38.6	192.4	73.5	95.2
Freighters	6.2	63.3	24.0	26.0

SHARE OF NEWBUILDING DELIVERIES USED FOR NET FLEET GROWTH AND FOR VESSEL REPLACEMENT

	Japan		World	
	Percent for Net Fleet Growth	Percent for Vessel Replacement	Percent for Net Fleet Growth	Percent for Vessel Replacement
Total Fleet	70.8	29.2	90%	10%
Tankers	89.2	10.8	95	5
Bulk Carriers	20.7	79.3	99	1
Freighters	0.0*	100.0*	37	63

*All new deliveries were used to replace vessels deleted from the 1970 fleet.

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

Exhibit II-4

OWNED AND CHARTERED TONNAGE OF JAPANESE OPERATORS

(gross tons in thousands)

	Japanese Flag		Chartered		Total		Chartered as a Percent of	
Year	Number of Vessels	Gross Tons	Number of Vessels	Gross Tons	Number of Vessels	Gross Tons	Total Gross Tons	Japanese Flag
1970	1,508	21,185	462	7,030	1,970	28,215	25	33
1971	1,531	24,130	592	10,113	2,123	34,243	30	42
1972	1,580	27,933	655	12,575	2,235	40,508	31	45
1973	1,476	30,623	820	17,718	2,296	48,341	37	58
1974	1,427	32,620	973	21,958	2,400	54,578	40	67
1975	1,317	33,485	1,152	26,003	2,469	59,488	44	78
1976	N.A.	34,649	N.A.	28,289	N.A.	62,938	45	82

Source: Statistics on Japanese Shipping Industry, Bureau of Shipping, Ministry of Transport, February 1976.

Through 1973 deliveries to the Japanese national fleet combined with the increases in the chartered tonnage represented approximately two-thirds of the output of Japanese shipyards. By 1974 and 1975, the additions to the two fleets (Japanese flag and chartered) were equivalent to approximately 40 percent of shipyard output with only 16 percent represented by the Japanese flag fleet alone. The lower percentage during 1974 and 1975 is in part due to the extraordinary high rates of deliveries of remaining export tanker orders.

Both the Japanese flag and chartered fleets have been primarily deployed in the carriage of Japanese foreign commerce. As shown in Table II-1, the percentage of freight revenues of the Japanese shipping industry (excluding time charter receipts) in the cross-trades was only 14 percent in 1974 and 13 percent in 1975. Thus, over 86 percent of the Japanese shipping industry is involved with Japan's foreign trade, despite the significant growth of the chartered segment of the fleet controlled by Japanese operators.

Table II-1

FREIGHT REVENUES OF JAPANESE SHIPPING INDUSTRY

(millions of dollars)

	Japanese Flag	Chartered Foreign Ship	Total	Percent
1975				
Exports	967	948	1,915	32
Imports	1,837	1,467	3,304	55
Cross-trade	381	404	785	13
Total	3,185	2,819	6,003	100
1974				
Exports	939	735	1,674	29
Imports	1,878	1,403	3,281	57
Cross-trade	462	351	813	14
Total	3,279	2,489	5,768	100

Source: White Paper on Shipping 1976, Bureau of Shipping, Ministry of Transport.

2. Conclusions

Japan has employed a vast array of assistance programs in the development of the world's largest shipbuilding industry and national flag fleet. Over time, the type and level of aid provided to these industries has changed significantly. During the 1970s many of the aid programs employed in building the fleet and shipbuilding sectors were phased down or eliminated. Short term specific measures were used extensively as changing conditions warranted. Such changes were made as Japanese shipping and shipbuilding became profitable, highly competitive and sensitive to domestic and internatonal accusations that subsidies were harmful to free competition and Japan's trading partners.

In the face of a world shipping and shipbuilding downturn, Japan has not been required to greatly expand the aid programs to these industries, as has been required in several of the other countries studied. In large part, this is because the industries have been strengthened greatly by past assistance programs and coordinated restructuring, which afforded Japan diversified companies, large market shares, and economies of scale.

The principal aid to the national fleet has been the provision of investment financing assistance. By the 1970s approximately $2.6 billion in credit was outstanding in loans from the Japan Development Bank to Japanese flag operators.[1] A large part of the credit granted during the 1960s was combined with interest subsidies on the JDB loans and loans from private city banks to provide 100 percent financing. Even during the 1970s, as owner equity requirements were increased, over 60 percent of the gross tonnage added to the Japanese fleet was financed using these credits, combined with interest subsidies.

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[1] *Dollar figures in this chapter have been converted at the 1975 exchange rate of 296.80 Japanese yen to the dollar.*

As growth in the fleet slowed after 1972, tax allowances including special depreciation allowances and capital gains reserves were liberalized, and yielded significant cash flow benefits to the ship operators. The tax allowance programs tend to encourage replacement as opposed to the high growth stimulus of the rapidly expanding credit availability of the 1960s.

Two-thirds of the Japanese-flag fleet is comprised of six diversified shipping groups, whose restructuring through mergers was a requirement of participation in the "subsidy" programs, i.e., the low interest investment financing and interest subsidies. These groups are financially strong due to their diversified operations and the recent buildup of reserves from the various tax allowance programs.

These six large shipping groups' fleet replacement requirements should be of such a magnitude that a large portion of Japan's future shipbuilding production can be assured, this ongoing basic replacement demand being stimulated by the requirements of the recent tax allowance programs.

As a result of rising labor costs, the Japanese shipowners greatly increased the level of chartered tonnage under their control over the past five years. Currently, the chartered tonnage is almost equal to the national flag fleet. It is likely that this balance will continue for Japanese wages will not likely induce owners to decrease the proportion of non-national flag tonnage, while union pressures through political channels will not likely allow Japanese operators a greater proportion of chartered capacity. The tax allowance programs should accommodate this balance by requiring a certain level of timely Japanese flag replacement constructions of efficient specialized vessels, while at the same time providing a reasonable level of employment for Japanese seamen.

Additional tax allowance programs in the form of free depreciation schedules were requested by the Japanese shipping industry in 1977, in order to shelter the high profits of the diversified shipping companies. It is expected that these programs will be further expanded but will be patterned in a fashion that maintains the above balance in the future.

Aids to the shipbuilding industry have been heavily tied to the provision of credit. The major financing assistance programs for Japanese ship operators directed large volumes of construction activity to Japanese yards. Credits for export financing were made available through the Japanese Export-Import Bank, initially at very attractive interest rates.

The Export-Import Bank level of credits to the shipbuilding industry reached $2.6 billion during the 1970s. Over the past five years, however, the decreasing demand for yen financing and deferred payments due to the strength of the yen reduced the level of Export-Import Bank participation in exports. In 1976 the budgets have been increased, however, in order to service a renewed requirement for deferred credit.

In 1975, 84 percent of Japan's orderbook consisted of export orders but for the duration of the shipbuilding recession the importance of domestic and charter fleet construction is expected to increase. These fleets have an aggregate capacity of 115 million dwt and could be replaced at the rate of nearly 6 million tons per year. Such activity would represent a major portion of Japan's reduced ship production. The remaining orders must be realized from the export sector.

Tax allowances have also been available to the Japanese shipbuilding industry. However, the most significant of these was a special program aimed at minimizing the effects of revaluation losses after the 1971 current realignments.

The largest Japanese shipbuilding companies are part of larger diversified conglomerates. Faced with required reductions in shipbuilding output, recent Export-Import Bank financing of diversified activities such as offshore energy structures and various floating structures as well as plants and heavy equipment from Japan's diversified shipbuilding companies has been made particularly attractive. The costs of this program cannot be estimated. Efforts to diversify the activities of the shipbuilding companies have shown positive, but somewhat mixed results.

Japanese policy with regard to shipbuilding appears to be aimed at indirectly minimizing the effects of the reduced worldwide shipbuilding demand. Low Japanese prices have captured extremely high shares of the recently available shipbuilding market. Other than an increase in Export-Import Bank funds to finance a greater demand for deferred credit, within OECD export guidelines, no apparent special government assistance programs have been instituted.

In contrast, the other countries studied have been forced to utilize extensive additional assistance in order to reduce the price differentials between their shipyard costs and the prices in Japan. Recently, however, Japan has faced price competition from Korean shipyards, using low cost labor and the ability as an LDC to offer non-OECD export credit terms.

Although Japanese prices were increased by 5 percent in early 1977 to narrow the gap between Japanese and European prices, and yen revaluation raised the effective cost of ships from Japan by an additional 10 percent, Japan may be forced to lower prices again in order to meet the LDC shipbuilding competition.

While certain Japanese shipyards have abandoned selected slipways and building docks, the Japanese reaction to world overcapacity has been marked by the desire to preserve infrastructures and organizations and adjust production volumes. This reaction reflects not only the unique responsibilities of Japanese industry to its labor force, but the perception of shipbuilding as a national asset that will emerge in future years when demand increases once again.

B. AIDS TO THE JAPANESE NATIONAL FLEET

1. Aid Programs

Japan's policy toward the national-flag fleet has been directed toward securing a significant share of the foreign trade for Japanese flag vessels. Japan's economy is more dependent on foreign trade than any of the other major maritime nations covered in this study and the Japanese government seeks to minimize the dependence of this important sector of Japan's economic activity on foreign-flag vessels whose costs are beyond the Japanese government's influence. By having a large share of raw material imports and manufactured goods exports and imports on Japanese flag vessels, the government can coordinate policy in the shipping area with overall economic policy and minimize the likelihood of unexpected price fluctuations in shipping having an adverse impact on Japan's economic growth.

The Japanese government has employed an extensive range of direct and indirect assistance programs to foster the development of the Japanese national fleet. Primary emphasis was initially on investment financing assistance through low interest loans and interest subsidies, but more recently has shifted in emphasis to tax allowance programs including depreciation allowances and tax-free reserves.

During the 1960s and early 1970s, investment financing aids played an important role in the development of the fleet, but the programs eventually were made more restrictive and became less effective. The tax allowance programs increased during the early 1970s and provided important contributions to Japanese operators until 1975, when reduced profitability lessened the potential benefits of tax related programs. The importance of aid programs with benefits designed in anticipation of not only high profit/high shelter periods, but times of low profits was revealed in Japan and in the Scandinavian countries as well.

Direct subsidies have to a lesser extent also been utilized by Japan, and are currently employed only in the domestic trades. Similarly, preferential cargo availability is employed only for domestic cargo.

Exhibit II-5 outlines the principal assistance programs available to the Japanese national fleet during the early 1970s. Each of the programs is discussed in detail in the following section. Section B.2. discusses the effectiveness of these programs. Section B.3. addresses recent and prospective programs.

a. Principal Aids to the Japanese National Fleet

(i) *Investment Financing Assistance*

During the 1960s, the most significant form of assistance to the Japanese national fleet was investment financing assistance. During the 1970s, however, as the principal financing arrangements became more restrictive, the impact of this form of aid decreased both in absolute terms and relative to other programs. Due to the length of financing arrangements the benefits of these programs have continued at high levels.

The financing assistance provided during the 1960s included 100 percent financing and was combined with interest subsidies. These extremely attractive programs were very important to the initial growth of the Japanese national fleet, which had already become the second largest fleet in the world by 1970.

The operators utilizing this assistance were required to agree to participate in mergers, which has resulted in the combination of about 40 current companies into six major groups of operators, or core companies, in the "subsidized" sector of the Japanese fleet. The fleets of these six groups account for approximately two-thirds of the deadweight tonnage of the Japanese flag fleet, and each comprises vessel operators, owners, and owner-operators in the liner, dry bulk and tanker sectors. The diversified structure of the current fleet has been most important recently in providing financial stability for the fleet as different sectors of the shipping industry have been disproportionately affected by the current shipping slump.

Exhibit II-5

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE JAPANESE NATIONAL FLEET

1970-1975

i. Investment Financing Assistance

  Program 1 - Japan Development Bank Loans
  Program 2 - Interest Subsidies
  Program 3 - Maritime Credit Corporation Financing
  Program 4 - Japan Development Bank Replacement Program

ii. Credit Assistance

iii. Tax Allowance Programs

  Program 5 - Special Depreciation Allowances
  Program 6 - Tax Free Reserves

iv. Direct Subsidies

  Program 7 - Cross Trade Subsidies
  Program 8 - Island/Mainland Operating Subsidy

v. Preference Programs

  Program 9 - Cabotage Preference

vi. Government Ownership

vii. Other

Investment financing assistance for Japanese flag operators has taken the form of:

- *Low interest loans from the Japan Development Bank (JDB) for foreign trade vessels. In 1970, 75 percent of the gross tonnage built for the Japanese flag utilized JDB loans. By 1975 the figure had fallen to 36 percent.*
- *Interest subsidies on both the JDB loans and the city bank (private banks) portions were also provided on vessels built prior to April 1975.*
- *The Maritime Credit Corporation provides financing for the construction of coastal vessels.*
- *The Japan Development Bank also provided special financing for replacement of small foreign trade vessels. This program was limited in application and was terminated in 1973.*

Program 1 - Japan Development Bank Loans to Shipowners

Loans to Japanese owners for the construction of oceangoing vessels are provided through the government-owned Japan Development Bank. The conditions of the loans are more favorable than Japanese owners could expect to receive from private sources of capital. In the 1960s, these loans carried an interest rate of 4 percent while the prime rate in Japan ranged from 7.5 to 8.7 percent. The loans were usually combined with loans from city banks to cover 100 percent of a vessel's cost.

In the 1970s, the terms became more restrictive, requiring higher levels of self-financing by the owners, but still provided financing at more favorable terms than private capital sources could offer. The Japan Development Bank loans combined with city bank loans and government interest subsidies provided financing for up to 95 percent of the cost for certain vessel types as shown in Exhibit II-6.

These loans were utilized by Japanese owners for $3.08 billion of new construction from 1971 to 1975, inclusive. Of the $3.08 billion, Japan Development Bank loans accounted for $1.64 billion, other bank loans for $0.92 billion, and self-financing by the owners for $0.54 billion. Vessels constructed using these financing aids aggregated 142 ships of 11.4 million grt and accounted for 18 percent of the vessels and 59 percent of the gross tonnage added to the Japanese fleet from 1970 to 1975 (see Exhibit II-7).

The JDB loans required charters[2] to support the financing. By 1974-1975, the limited availability of charters coupled with the increasing equity requirements and the elimination of interest subsidies reduced the demand for this form of financing.

Aggregate outstanding Japan Development Bank loans to Japanese shipowners increased from $2.0 to $2.6 billion between 1970 and 1974 as shown in Exhibit II-8. However, the decreasing use of the JDB loans and the lower participation by the JDB slowed the growth of outstanding funds as the loans being paid off began to approach the reduced level of new commitments.

Exhibit II-8

OUTSTANDING JAPAN DEVELOPMENT BANK LOANS TO SHIPOWNERS

(millions of dollars)

	1970	1971	1972	1973	1974	1975
Amount Outstanding	2,014	2,257	2,502	2,598	2,600	N/A

Source: Handbook of Shipping Statistics, 1976, Ministry of Transport.

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[2] *Of sufficient magnitude to assure the recovery of the cost of the vessel within ten years. Freight or cargo guarantees as short as three years may be approved, while liner vessels require specific JDB screening.*

Exhibit II-6

Terms of Financing for Japanese Owners of Oceangoing Ships

Fiscal Years 1971-1975

1971-1972	1973	1974	1975
Percent of Self-Financing Required of Owner			
a. Containerships - 5% b. Cargo Liners - 10% c. Other Ships - 20%		a. Containerships - 5% b. Other Ships - 20%	
Percent of Financing Provided by Japan Development Bank			
a. Containerships - 61.8% b. Cargo Liners - 58.5% c. Other Ships - 52.0%		a. Containerships - 70% b. Other Ships - 60%	
Percent of Financing Provided by City Banks			
a. Containerships - 33.3% b. Cargo Liners - 31.5% c. Other Ships - 28.0%		a. Containerships - 25% b. Other Ships - 20%	
Terms of Japan Development Bank Loans			
5.5-5.8% Interest	5.5-6.7% Interest	5.9-6.7% Interest	7.5-8.0% Interest
(a) and (b) - 10 years repayment after 3 year grace period on amortization of principal (c) - 8 years repayment after 3 year grace period on amortization of principal		10 years repayment after 3 year grace period on amortization of principal	
Terms of City Bank Loans			
6.2-6.5% Interest	6.5-7.4% Interest	7.4% Interest	9.2-9.9% Interest Repayment period = Construction Period plus 8 years.

Source:

Exhibit II-7

SHIPBUILDING FOR JAPANESE OWNERS FINANCED WITH JAPAN DEVELOPMENT BANK LOANS

Fiscal Years 1960-1975

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Amount of Financing Provided by: ($ millions)																
Owners	-	-	-	-	-	-	-	-	-	42.5	44.3	103.9	148.7	109.5	119.2	61.3
Government (Japan Development Bank)	37.3	62.4	50.9	73.2	154.9	238.1	255.2	243.6	274.3	271.6	300.2	323.1	433.3	283.7	345.5	250.2
Banks	16.9	52.3	21.3	22.1	44.4	72.3	80.0	75.9	82.5	124.6	145.8	180.3	248.0	189.9	198.2	85.5
Total	54.2	114.6	72.2	95.4	199.3	310.3	335.2	319.5	354.0	438.7	490.4	607.3	830.0	583.1	662.9	397.0
Vessels Built																
Freighters and Bulk Ships	14	19	7	9	26	48	64	46	46	45	33	29	22	11	12	11
Tankers	2	8	6	9	15	17	11	10	11	12	12	12	15	14	13	3
Total	16	27	13	18	41	65	75	56	57	57	45	41	37	25	25	14
Gross Tonnage Built (000)																
Freighters and Bulk Ships	134	231	161	130	482	1,015	1,282	1,154	1,259	1,412	1,234	1,827	1,483	351	555	593
Tankers	58	267	232	437	727	810	627	879	1,049	1,062	1,390	1,392	1,822	1,634	1,384	352
Total	192	498	393	567	1,209	1,825	1,909	2,033	2,308	2,474	2,624	3,218	3,304	1,985	1,939	945
Percent of Financing Provided by:																
Owners	-	-	-	-	-	-	-	-	-	9.7	9.0	17.1	17.9	18.8	18.0	15.4
Government (Japan Development Bank)	68.9	54.4	70.5	76.8	77.7	76.7	76.1	76.3	77.5	61.9	61.2	53.2	52.2	48.6	52.1	63.0
Banks	31.1	45.6	29.5	23.2	22.3	23.3	23.9	23.7	22.5	28.4	29.8	29.7	29.9	32.6	29.9	21.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source:

The interest rates shown in Exhibit II-6 are net of interest subsidies, which are described in the following section. In Exhibit II-9, the interest rates before subsidy are shown. As can be observed from Exhibit II-9, the JDB interest rates before subsidy were on average approximately two points below the rates on the City Bank loans. Approximately the same spread existed between the JDB loans before subsidy and prime market rates. Thus, the JDB loans provided a benefit to Japanese operators approximately equal to the two point spread in interest rates. If this estimated interest differential is applied to the outstanding loans to shipowners in Exhibit II-8 the benefit can be estimated at between $25 and $40 million per year between 1970 and 1974.

Program 2 - Interest Subsidies

Interest subsidies on Japan Development Bank loans and other bank loans used in the financing of the construction of oceangoing vessels for Japanese owners were provided until April 1975. On the finacing described in Exhibit II-6, the interest rates that are shown in each year on the Japan Development Bank loans and on the loans for other banks are net interest rates after government interest subsidies. As shown in Exhibit II-9, the subsidies on Japan Development Bank loans ranged from 0.7 to 1.63 percentage points and totaled between $31.4 million and $37.1 million per year from 1970 to 1974. Interest rate subsidies on other bank loans ranged from 1.2 to 2.5 percentage points and totaled between $8.1 million per year and $13.7 million per year from 1970 to 1974.

The program was eliminated in April 1975. However, provisions in the agreements require the repayment of the interest subsidies if within the 15 year period following the first drawdown of the loan the company has unconsolidated net income in any year in excess of 10 percent of its capital stock. The subsidy to be repaid is determined on a progressive scale up to 75 percent of net income in excess of 15 percent of capital stock. Given this potential liability, the tax allowance programs discussed in the following sections take on a greater significance.

Exhibit II-9

INTEREST SUBSIDIES
PROVIDED BY THE JAPANESE GOVERNMENT
FOR JAPAN DEVELOPMENT BANK LOANS AND OTHER BANK LOANS

Fiscal Years 1960-1975

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Amount of Interest Subsidy Providied ($ millions)[a]																
Japan Development Bank Loans	-	-	0.4	1.1	2.5	6.1	12.5	17.9	23.6	29.1	31.4	32.3	37.1	36.9	36.5	31.2
Other Bank Loans	2.3	1.9	1.9	2.0	1.9	2.8	4.5	5.7	6.7	7.5	8.1	9.2	11.9	13.0	13.7	12.8
Total	2.3	1.9	2.3	3.1	4.4	8.9	17.0	23.6	30.3	36.6	39.5	41.5	49.0	49.9	50.2	44.0
Interest Rates (Percent)																
a. JDB Loans																
Japan Development Bank	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5-6.75	7.5-8.0	7.5-8.0
Less Government Interest Subsidy	-	1.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.0	1.0	0.7-1.0	0.7-1.0	0.7-1.25	1.35-1.63	-
Total JDB	6.5	5.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	5.5	5.5	5.5-5.8	5.5-5.8	5.5-5.8	5.9-6.7	7.5-8.0
b. Other Bank Loans																
Other Banks	9.13	9.13	9.13	9.13	9.13	9.13	8.76-8.94	8.76-8.94	8.4-8.76	8.2	8.5	8.2-8.5	7.7-8.0	7.7-9.9	9.4-9.9	9.2-9.9
Less Government Interest Subsidy	1.99	1.99	3.13	3.13	3.13	3.13	2.76-2.94	2.76-2.94	2.4-2.76	2.2	2.2	1.7-2.0	1.7-2.0	1.2-2.5	2.5	-
Total Other	7.14	7.14	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.3	6.2-6.5	6.2-6.5	6.5-7.4	7.4	9.2-9.9

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[a] Dollar figures are converted at average exchange rate of the year shown.

Program 3 - Maritime Credit Corporation Financing

A government-owned credit institution, the Maritime Credit Corporation, finances part of the cost of a new vessel for the domestic trade if it replaces an obsolete vessel being scrapped. The purpose of the Maritime Credit Corporation's program is to encourage the scrapping of older, inefficient vessels in the coastal trade and to replace them with new, more efficient vessels. Terms of the MCC financing have been as shown in Exhibit II-10.

The Maritime Credit Corporation takes 70 percent equity in the vessels financed under this program, and operators make monthly payments comparable to debt service charges. At the end of the financing period the Maritime Credit Corporation sells the vessel to the operator for its scrap value. The payments to the Maritime Credit Corporation provide constant annual amortization of the principal, plus interest on the outstanding balance. Thus, for the first years of a financing under this program, an operator's payments are equivalent to the percentages of the acquisition cost of the vessel shown in Table II-2.

Table II-2

ANNUAL OPERATOR PAYMENTS UNDER MCC LOANS
(Percent of Vessel Acquisition Cost)

	1970	1975
	18 years repayment 6.5% interest	12 years repayment after 3 years grace period - 8.9% interest
First Year	8.44%	6.23%
Second Year	8.19%	6.23%
Third Year	7.93%	6.23%
Fourth Year	7.68%	12.06%
Fifth Year	7.43%	11.54%
Sixth Year	7.18%	11.03%

Source: Exhibit II-10.

Exhibit II-10

MARITIME CREDIT CORPORATION FINANCING

(1970-1976)

Fiscal Year:	1970	1971	1972	1973	1974	1975	1976
Percent of Finance provided by Maritime Credit Corporation	70%	70%	70%	70%	70%	70%	70%
Interest Rate (%)	6.5%	6.5%	6.5%	6.75%	7.5% 9.3-9.4%[a]	8.9%	8.9%
Repayment Schedule	10-18 years					7-12 years after 3 years grace period on amortization of principal	
Amount of Financing provided by Maritime Credit Corporation ($ millions)	$24.3	$29.0	$31.7	$18.5	$25.3	$27.0	$40.4
Ships Built	58	62	22	28	34	56	n.a.
Gross Tonnage built	58,797	70,289	27,097	26,781	14,000	40,421	n.a.

[a] Interest rates vary by vessel type.

Compared to a commercial loan to a domestic operator, if indeed credits of the length offered by the Maritime Credit Corporation would be made available to domestic operators, the terms offered by the Maritime Credit Corporation provided benefits worth at least $3 million per year to Japanese operators of domestic trade vessels.

Between 1970 and 1975, 260 vessels totaling 237,385 grt have been constructed under this program. As can be inferred from Exhibit II-10, the vessels are, in fact, small coastal vessels and the cyclical allocation of Maritime Credit Corporation loans reflects the exogenous factors in the Japanese economy and the ability of coastal operators to compete using older vessels if demand is sufficiently high as it was in 1973.

Program 4 - Japan Development Bank Replacement Program

A program for owners of oceangoing vessels, similar to the scrap-and-build program for home-trade vessels described above, was available through the Japan Development Bank. The Development Bank financed up to 50 percent of a new vessel of 4,000 grt or more that replaced an obsolete vessels of 3,000 grt or more. The program placed a ceiling on the amount of financing available for a given project, thereby effectively limiting the size of the vessels which could be constructed under this program. Due to the limited demand for smaller vessels for the Japanese flag fleet, the program was terminated in 1973, after providing $24.25 million in financing between 1970 and 1973 (Exhibit II-11). If the shipowners had paid commercial rates of interest on these loans, they would have incurred at least $0.5 million per year in additional expense between 1970 and 1973.

Exhibit II-11

JAPAN DEVELOPMENT BANK REPLACEMENT LOANS

(1970-1973)

Fiscal Year	1970	1971	1972	1973
Percent of Financing Provided by the Japanese Development Bank	50%	50%	50%	50%
Interest Rate[1] (%)	6.5%	6.5%	6.5%	6.5%
Repayment Schedule	8-10 years after 3 year grace period on amortization of principal			
Amount of Financing provided by the Japan Development Bank ($ millions)	$3.37	$6.06	$8.42	$6.40

[1] No interest subsidies are available for vessels built under this program.

Source: Handbook of Shipping Statistics 1976, Ministry of Transport.

(ii) Credit Assistance

Credit assistance is not applicable to national flag operators.

(iii) Tax Allowance Programs

During the 1970s the tax allowances available to Japanese shipowners were liberalized and became more significant to Japanese flag operators. The principal programs were:

- *Special depreciation allowances for vessels and other equipment. The amount of special depreciation allowed was increased in 1972 and has been modified since. The program provided significant cash flow benefits until 1975, when profitability pressures diminished the primary effects of the program.*

- *Tax-free reserves have been available to Japanese operators for a variety of purposes, including repairs. During the mid-1970s, a fund into which capital gains could be deposited took on a greater significance as the growth of the fleet slowed and smaller vessels were sold off.*

- *Twenty-five percent of the social security payments for seamen are also financed by the government under the "Seamen's Insurance Law." By 1976, the government budget provided $41.3 million for this purpose.*

Program 5 - Special Depreciation Allowances

Special depreciation allowances have been made available to Japanese shipowners. During the 1970s the programs have undergone significant revisions to encourage fleet replacement and other specific equipment related objectives.

The special depreciation programs allow an operator to take additional depreciation above normal depreciation allowances. The special depreciation must be "repaid", that is, taken back in as income within specified time periods. Until April 1, 1976, the special depreciation was repayable over ten years. After that date the special depreciation is repayable over seven years.

The special depreciation allowances in effect for ships over 2,000 gross tons available at different time periods have been as follows:

--from April 1976 - 20%
--from April 1973 - 25%
--from April 1972 - 33%
--from April 1971 - 20%[3]
--before April 1971 - 10%[3]

Prior to April 1972 the above special depreciation was available only to domestic vessels under rationalization programs. For vessels in the overseas trades, special depreciation allowances were scaled in proportion to the ratio of overseas revenues to total revenue. That system was abolished in 1972 and the above program was temporarily increased to a 33 percent allowance and applied to foreign trade vessels.

The special depreciation program is the most significant of the tax allowance programs. Between March of 1972 and September of 1974, the six core companies and affiliates increased their cumulative special depreciation reserves from $445 million to over $903 million.[4] Over the 2-1/2 years, the increase equates to an annual rate of $183.2 million.

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[3] *Domestic vessels only.*

[4] *Six core companies are: Yamashita-Shinnion (YSLine); Kawasaki Kisen Kaisha (KLine); Nippon Yusen Kaisha (NYKLine); Japan Line; Mitsui OSK; and Showa Line.*

Special initial depreciation is also allowed on certain types of other assets. This special first year depreciation is available to Japanese corporations in general and has application to the shipping and shipbuilding industries. Eligible items include pollution control equipment, certain safety-related equipment, advanced data processing equipment, and other items, and the initial depreciation percentage typically falls in the 20 to 50 percent range.

The aggregate special depreciation reserves for pollution control and other equipment on the balance sheets of the six core companies and affiliates amounted to $23.5 million as of September 1975.

Program 6 - Tax Free Reserves

Special reserve funds that defer or eliminate tax liability have been employed by Japan. Some of the major reserves available to Japanese shipowners include:

1. Reserve for tax deferment of replacement of special business assets.
2. Reserve for special repairs of vessels.
3. Reserve for price fluctuations of inventories and securities.
4. Reserve for overseas investment losses.
5. Reserve for overseas market development costs.
6. Reserve for retirement allowances and bonuses.

Of the variety of reserves available, the most significant has been the use of the reserve for replacement of assets, that is a reserve to which book profits from the sale of a ship (or certain other land or building properties) can be credited. These reserves subsequently can be applied to the purchase price of new vessels.

Analysis of the reserve accounts of the six core companies, shows the following aggregate reserve funds for reserves other than the special depreciation reserves discussed in the previous section (Exhibit II-12).

Exhibit II-12 measures the benefit of the reserves, solely on the net increases in the reserve fund. Other capital gains would have been directly employed in the reduction of the book value of new constructions during the period.

The capital gains program has been available since 1972, hence, $200 million at the end of 1973 reflects the extent of the other reserve funds. The large increase in 1974 in the replacement reserve, coincides with the slower growth of the fleet which results from both lower orders and higher second-hand sales.

In determining the benefit of the tax allowance programs, the incremental reserves have been estimated as the net tax shelter provided by the program. Thus, the special depreciation provided an estimated $150 million in 1973 and an additional $75 million in 1974. In 1975, the depreciation reserves of the six core companies showed no increase and therefore provided no future net benefit that year. However, as discussed, the requirements to reintroduce the special initial depreciation into income will place pressure on the Japanese operators to make additional investments in Japanese flag vessels in order to offset this income within the seven to ten year period.

With regard to the replacement reserve, the benefit of the program has been estimated as the tax shelter obtained during 1974 when the reserve fund increased by $92 million. These funds must be reinvested in Japanese flag vessels in order to maintain the tax benefit of the reserves. Thus, the current character of this program has shifted from providing additional benefit to Japanese shipowners to providing a significant incentive for reinvestment.

Exhibit II-12

SIX CORE COMPANIES' RESERVES FOR REPLACEMENT

(millions of dollars)

	1972	1973	1974	1975
Amount	200.9	197.6	381.8	351.6
Increase	N.A.	(3.3)	184.2	(30.2)
Tax Benefit of Increase	N.A.	(1.65)	92.1	(15.1)

Source: Financial Statistics of Six Core Companies, Ministry of Transport, 1970-1976.

(iv) Direct Subsidies

Direct subsidies have been available to Japanese flag operators, but the programs have been both specialized and limited.

- *Operating subsidies for initiating new cross trades were provided until 1969. Small amounts of previously committed funds were paid after that date.*
- *Subsidies are paid to coastal operators which primarily result in offsets to losses on those operations.*

Program 7 - Cross Trade Subsidies

Operating subsidies for initiating new cross trade services were eliminated in 1969 as Japanese lines became highly competitive. These subsidies had been granted previously for liner services in the amount of 3 percent of the cross trade freight revenue in the first two years after initiation of service, 2 percent for the third year, and 1 percent for the fourth and fifth years. For tramp services, the subsidy amounted to 2 percent for the first year and 1 percent for the second and third years.

Payments for cross-trade services initiated before 1969 continued into the 1970s. Budgeted levels for the cross trade subsidies decreased from $2.8 million in 1965 to $.76 million in 1969 after which the amounts budgeted were inconsequential.

Program 8 - Island/Mainland Operating Subsidy

Operating subsidies are provided by the government for Island/Mainland services. These subsidies for the home fleet have increased from $0.9 million in 1970 to $4.5 million in 1975 and $6.4 million in 1976.

As shown in Exhibit II-13, the subsidies have been paid to an increasing number of operators and routes and have offset approximately 75 percent of the aggregate deficits of the operators on those routes.

(v) Preference Programs

Program 9 - Cargo Preference

Cabotage trades are reserved for Japanese-flag vessels. There are no restrictions on trading in cabotage trades with subsidized oceangoing vessels as in the United States.

No formal restrictions exist in the foreign trade but Japanese companies and operators are encouraged to arrange import purchases on an f.o.b. basis and to make export contracts on a c.i.f. basis to facilitate Japanese control over the shipping decisions. One of the conditions for operators acquiring the favorable terms of Japan Development Bank financing is the requirement for a cargo commitment for the Japanese-flag vessel to be built (e.g., bulk carriers obtaining Japan Development Bank financing are required to have ten year charters for importing raw materials to Japan).

(vi) Government Ownership

None

(vii) Other

None

b. Benefits of Japanese Assistance Programs to the National Fleet

Exhibit II-14 provides a summary of the aids to Japanese flag operators by program and year for the period 1971 to 1975. As shown in the exhibit, the principal programs during 1971 and 1972 were in the area of investment assistance. During 1973 and 1974, the expanded depreciation allowances and the tax free reserves increased in magnitude, but during 1975 provided no incremental benefit.

Exhibit II-13

ISLAND/MAINLAND OPERATING SUBSIDIES
1970-1976
(millions of dollars)

Year	No. of Operators	No. of Routes	Deficits	Amount of Subsidies
1970	54	64	$1.44	$1.09
1971	58	67	1.55	1.17
1972	79	88	1.91	1.44
1973	87	97	2.84	2.13
1974	91	102	4.03	3.02
1975	92	103	6.03	4.54
1976	105	115	8.51	6.41

Source: White Paper on Shipping 1976, (Japanese Version), Bureau of Shipping, Ministry of Transport.

Exhibit II-14

SUMMARY OF BENEFITS TO JAPANESE OPERATORS

1971-1975

(millions of dollars)

	1971	1972	1973	1974	1975
Program 1: JDB Loans	45.0	50.0	52.0	52.0	52.0
Program 2: Interest Subsidies	41.5	49.0	49.9	50.2	44.0
Program 3: Maritime Credit Corp.	3.0	3.0	3.0	3.0	3.0
Program 4: JDB Replacement Program	.5	.5	.5	.5	.5
Program 5: Depreciation Allowance	65.0	32.0	150.0	75.0	--
Program 6: Capital Gains Reserves			--	92.1	--
Program 8: Island/Mainland Subsidies	1.2	1.4	2.1	3.0	4.5
Subtotal:	167.0	136.0	357.0	275.1	104.0

Program 7 - Cross Trade Subsidies: expenditures were minimal after 1969.

Program 9 - Domestic Cargo Preference: includes no direct cost expenditures.

Two significant trends in the aid programs available to the Japanese national fleet are observable over the 1971-1975 period. First, the aid programs have generally decreased over the period as a result of programs that have been eliminated and others which have been made less attractive and utilized to a lesser degree by Japanese flag operators. Second, the emphasis of the aid programs available to the Japanese flag fleet has changed with the changing needs of the Japanese flag operators.

Generally, the primary emphasis on investment financing assisted Japanese flag operators to construct the largest national flag fleet of vessels in the world. Liberalization of tax allowances subsequently assisted operators as, first, large additions to the fleet came on stream during a period of high profitability and then the sale of less competitive vessels took place in a less profitable period.

In 1975 the benefit of the Japanese assistance programs returned to the $100 million per year of ongoing effects of the earlier investment financing aids. As the subsidized loans are paid off, the interest subsidy will decline. The Japan Development Bank financing, however, is likely to continue at its current rate in that the amount of outstanding loans has leveled off and replacements for the Japanese fleet will be necessitated by the "repayment" requirements of the special depreciation allowances. As those reserves are brought back into income, new assets that provide shelter on the earnings will be required.

In the short term, however, it may be possible that special exemptions on the depreciation repayments will be put into effect until the world shipping market stabilizes. The Shipping and Shipbuilding Rationalization Council called for an increase in Japanese flag capacity to meet growing Japanese trade levels.[5] However, it is likely that future maritime aid programs will balance the rising costs of Japanese seamen and their concern for jobs with the requirements of operators for competitive home and offshore capacity through the use of tax allowances.

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[5] *Shipping and Shipbuilding Rationalization Council (SSRC) report of Decmeber 1974 presented major recommendations and forecasts for Japanese shipping and shipbuilding policy in view of the impending worldwide shipping and shipbuilding crisis.*

2. Effectiveness of Aids to the Japanese Flag Fleet

The combination of inexpensive credits, liberal tax treatments and other aid programs described above encouraged the rapid growth and modernization of the Japanese fleet in the 1960s and 1970s. The gross registered tonnage of the fleet more than doubled from 10.9 million in 1965 to 24.5 million in 1970, raising its rank among world fleets from fourth to second with only Liberia having registered tonnage in excess of Japan's. Japan's share of the world fleet rose from 7.2 percent in 1965 to 11.6 percent in 1970, and at an average age of seven years the fleet was the world's most modern in 1970.

Under a five year plan that began in 1969, Japan was committed to expanding its merchant fleet by 50 percent. This was a significant reduction from the growth rate achieved in the late 1960s but still constituted an increase of 10.2 million grt. By the end of 1974, Japan's fleet had grown to 36 million grt, 77 percent above the end-1969 figure. In December 1974, a report of the Council for Rationalization of Shipping and Shipbuilding industries suggested it was necessary to construct new Japanese flag vessels of 12-13 million grt between 1975 and 1979. Net of replacements, this will result in a substantially lower growth rate. However, as noted elsewhere, Japanese flag and chartered ships carried 74 percent of imports and 54 percent of exports in 1975.

In the early part of the 1970-1975 period, Japanese owners continued to acquire vessels at a rapid rate despite the requirements by the Japan Development Bank that a larger portion of vessels' cost be self-financed by the owners. From the five years average of 2.1 million gross tons per year financed with the aid of Japan Development Bank loans in 1965-1969, the average rose to 3 million gross tons per year from 1970-1972. The owners share of the financing rose from zero to 18 percent between 1968 and 1972 and the Development Bank's share dropped from 78 percent to 52 percent. Other banks supplied the remainder of the financing.

By 1973, however, the rate of growth began to decline. An average of 1.96 million gross tons per year was financed using the Development Bank loans in 1973-1974 and only 0.95 million tons in 1975.

Total growth of the Japanese fleet, including vessels not financed through the Development Bank's credit facilities, showed similar decline in 1973-1975. Exhibit II-15 illustrates the magnitude of the decline in the growth rate.

Japan's rate of fleet growth fell below the growth rate for the world fleet in each year after 1972, causing Japan's share of the world fleet's gross tonnage to decline from 12.7 percent in 1972 to 12.5 percent in 1973, 11.7 percent in 1974, and 11.2 percent in 1975.

For the freighter sector of the fleet, rapid additions of tonnage in the late 1960s increased Japan's share of the world freighter fleet from 7.2 percent of the gross tonnage in 1965 to 10.0 percent in 1970. The average age of Japan's freighter fleet declined from ten years to seven years between 1964 and 1970 while the average of the world's freighter fleet in those years was 15 years and 13 years, respectively. In 1965, Denmark's freighter fleet was more modern than Japan's while the freighter fleets of West Germany and the Netherlands were approximately equal in age to Japan's. By 1970, however, Japan's freighter fleet ranked first in terms of lowest average age.

From 1970 to 1975, however, Japan's freighter fleet declined in both number of vessels and gross registered tonnage while the world's freighter fleet increased by 5.7 percent in vessels and 11.0 percent

Exhibit II-15

JAPANESE FLEET
OCEANGOING VESSELS OF 1,000 GRT AND OVER
1965-1975

Year	Gross Registered Tonnage (000)	Growth in GRT from Previous Year (000)
1965	10,886	-
1966	13,447	2,561
1967	16,101	2,654
1968	18,797	2,696
1969	21,968	3,171
1970	24,519	2,551
1971	27,710	3,191
1972	31,804	4,094
1973	34,389	2,585
1974	35,994	1,605
1975	37,164	1,170

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce, annual.

in grt. Japan's share of the world fleet's tonnage declined from 10.0 percent in 1970 to 7.3 percent in 1975, although it continued to remain among the most modern having the lowest average age among fleets that represent more than 1 percent of the world's freighter vessels and had the second lowest age of all freighter fleets.

These declines in absolute tonnage of the fleet and in percentage of the world's fleet occurred despite the most favorable terms of the Japan Development Bank's financing being reserved for containerships and liner vessels.

Exhibit II-16 summarizes the growth of the Japanese fleet by vessel type. Also shown are the summary figures on national flag carriage, profitability and employment.

As shown in Exhibit II-16, the Japanese flag fleet has carried between 41 and 45 percent of Japan's imports and between 23 and 39 percent of Japan's export tonnage. Including the chartered tonnage, Japanese ship operators carried 74 percent of imports and 54 percent of exports in 1975. The freighter fleet declined by almost one-fifth in size over the study period.

Despite the growth in tonnage of the fleet, the number of vessels registered under Japanese flag has decreased slightly over the study period. The fleet has provided employment for between 120,000 and 130,000 seamen, which until recently had been totally Japanese nationals. Japanese wages have escalated at rates exceeding 20 percent per year and owners have developed bareboat charter arrangements in order to employ non-nationals to reduce operating costs.

On an IMF[6] basis, Japan's shipping account shows a deficit over the study period. Shipping receipts and payments for exports and imports are in balance;

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[6] *Balance of payments for shipping goods and services as calculated under International Monetary Fund (IMF) guidelines.*

Exhibit II-16

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY
FLEET OPERATIONS

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: Japan

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Fleet Size Registered, Fleet Growth[b]								
Total Ships[a]	- Number	2,109	2,153	2,210	2,145	2,143	2,051	-0.6
	DWT	39,142	44,900	52,267	57,286	60,167	63,238	10.1
	GRT	24,519	27,710	31,804	34,389	35,994	37,164	8.7
Tankers	- Number	368	388	436	485	520	531	7.6
	DWT	16,036	19,299	23,281	27,694	30,707	33,950	16.2
	GRT	9,399	11,087	13,077	15,268	16,891	18,640	14.7
Bulk Carriers	- Number	429	481	525	530	542	535	4.7
	DWT	13,249	15,958	19,420	20,978	21,196	21,270	9.9
	GRT	8,254	9,891	11,875	12,822	12,955	12,871	9.3
Freighters	- Number	1,284	1,257	1,217	1,098	1,049	954	-5.8
	DWT	9,782	9,571	9,486	8,535	8,191	7,945	-4.1
	GRT	6,760	6,635	6,732	6,171	6,026	5,526	-4.0
Deliveries to the Fleet[c] (where intended registry is known)								
Total Ships[a]	- Number	241	185	198	157	127	109	-14.7
	DWT	6,013	7,166	9,406	8,141	4,430	4,846	-4.2
	GRT	3,565	4,127	5,427	4,510	2,590	2,630	-5.9
Tankers	- Number	24	27	45	68	59	43	12.4
	DWT	2,357	3,366	4,371	5,204	3,375	3,750	9.7
	GRT	1,275	1,763	2,239	2,677	1,894	1,956	8.9
Bulk Carriers	- Number	57	70	76	38	32	26	-14.5
	DWT	1,525	3,111	4,266	2,523	698	773	-12.7
	GRT	2,520	1,888	2,486	1,460	435	449	-29.2
Freighters	- Number	159	88	71	48	35	38	-24.9
	DWT	1,130	689	751	410	354	319	-22.4
	GRT	762	476	669	361	306	212	-22.6
Vessels on Order at Year-End[c] (where intended registry is known)								
Total Ships[a]	- Number	157	255	213	204	199	231	8.0
	DWT	8,078	22,420	22,855	18,368	20,111	15,068	13.3
	GRT					10,797	8,409	NA
Tankers	- Number	22	77	107	99	119	80	29.5
	DWT	4,505	13,788	18,233	15,056	16,999	10,613	18.7
	GRT					8,902	5,647	NA
Bulk Carriers	- Number	65	117	65	66	51	86	5.8
	DWT	2,824	7,752	4,110	2,906	2,859	3,721	5.7
	GRT					1,682	2,193	NA
Freighters	- Number	70	61	41	39	27	65	-1.5
	DWT	749	880	512	406	250	735	-0.4
	GRT					210	569	NA

Exhibit II-16

Fleet Operations (continued)

Country: Japan

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
	Share of National Trade (percent)[g]						
Imports	45	45	42	44	41	46[d]	0.4
Exports	39	34	29	27	24	23[d]	-10.0
	Reported Financial Results (millions of dollars)						
Revenues[e]	3,012	3,371	3,512	4,918	7,079	7,107	18.7
Profits[e]	214	146	50	286	321	38	-29.2
Outstanding Debt[e]	2,273	2,777	3,122	3,186	3,160	2,946	5.3
	Employment[f]						
Nationals	NA	NA	124,288	118,258	NA	NA	NA
Total	NA	NA	124,288	118,258	120,357	129,628	NA

[a] Includes Combination Passenger/Cargo Vessels not shown separately.

[b] Source: Merchant Fleets of the World, Maritime Administration, U.S. Dept. of Commerce, semi-annual.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Including chartered tonnage: 74 percent of imports and 54 percent of exports.

[e] The figures shown are for the six Japanese core companies and affiliates. In 1974 and 1975, the 40 companies included accounted for about two-thirds of the deadweight under the Japanese flag.

[f] Source: Maritime Transport, Organization for Economic Cooperation and Development, annual.

[g] Source: White Paper on Shipping 1976, Ministry of Transport.

however, Japanese flag vessels and chartered tonnage are involved in cross trades to only a small degree while the costs of the large chartered fleet place the overall account into the negative.

The above shipping balance does not reflect two key factors. First, over two-thirds of the total foreign trade is carried on Japanese owned or controlled vessels. The foreign exchange effects of this are significant. Second, much of the controlled tonnage has been constructed in Japan and the charter payments in large part are a delayed "repayment" of prior exports by the shipbuilding industry.

Thus, Japan's objective of controlling a large portion of the payments in its shipping account has certainly been achieved. Second, while showing a deficit in the shipping account due to payments to offshore controlled charters, the effects on the Japanese economy are far more positive than negative due to the economies of offshore charters and the domestic production of a majority of the vessels. Third, while maintaining a reasonable level of employment for Japanese seamen, Japan has a large national fleet with resources which can sustain a volume of shipbuilding output for the domestic and controlled fleets.

3. Recent and Prospective Programs

The Japanese government eliminated interest subsidies on Japan Development Bank loans and on city banks' loans to Japanese owners as of April 1, 1975. These subsidies had come under severe criticism in Japan when shipping companies were enjoying high profitability in recent years. The competitiveness of Japanese shipyards and declining interest rates supported this elimination. They had been a major benefit to Japanese owners, total interest subsidies on outstanding loans having reached $50 million per year in 1974. Interest subsidies will continue to be paid on outstanding loans committed before April 1, 1975, but new ships financed after that date carry interest rates on JDB loans 1.35 to 1.63 percentage points higher than in fiscal year 1974 and other bank loans that had previously been subsidized carry rates 2.5 percentage points higher than in fiscal 1974. As discussed previously, this contributed to the decline in new financings with these programs to 14 vessels of 0.95 million grt in fiscal 1975 from the 25 vessels of 1.94-1.99 million grt in each of the previous two years.

The elimination of these subsidies also had a detrimental effect on Japanese shipbuilding although orders from Japanese owners have represented less than 20 percent of the Japanese yards' output in recent years.

Rising labor costs have caused considerable concern among Japanese owners. In May 1976, the shipowners Management Association representing seven large owners announced plans to reduce within one year the number of vessels owned by its members by 72 of the 753 ships currently in operation.[7] Other owners have also sought to sell ships, especially smaller labor-intensive vessels, to foreign fleets, but they have not met with much success so far.

Foreign crews on Japanese vessels have also been introduced through special bareboat/time charter back arrangements as a means of alleviating high manning costs. By April 1976, 152 Japanese vessels of 1.47 million dwt were manned by foreign crews, and within the next year another 38 ships of 0.61 million dwt were expected to join the fleet under similar circumstances. These measures have met with considerable opposition from the All Japan Seamen's Union, but the Ministry of Transport has allowed this approach as a way of relieving the Japanese shipowners of excessive manning costs.

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[7] *Shipowners Management Association members: YSLine; KLine; NYKLine; Japan Line; Mitsui OSK; Showa Line; and Sanko Line.*

Japanese shipowners have voiced objections to emerging trends in several nations toward cargo preference, and they have urged the government to consider retaliatory steps against the ships of nations that implement cargo preference rules. Higher port entry fees and banishment from Japanese ports have been suggested as potential retaliatory measures.

The Japanese ministry of Transport commissioned a study by the Shipping and Shipbuilding Rationalization Council (SSRC), an advisory council to the Minister of Transport, which is currently reviewing long term approaches to future Japanese aids to shipping and shipbuilding. Thus, specific new programs and major changes to existing programs are not likely in the very short term. In the future, the areas likely to receive particular emphasis are the relationships between the controlled and Japanese flag fleets, and the future role of and effects of the programs on Japanese seamen.

Currently, the Japanese operators have a package of programs available to them with little ongoing additional benefit in an environment of reduced fleet expansion and low profitability. However, the effects of the programs from prior years of high profitability have established a fairly sound base for the existing operators during the currently depressed shipping markets. Only the repayment clauses of the programs, which include the reintroduction of special depreciation which could trigger interest subsidy repayments, raise the potential for added pressure and negative effect from the existing programs due to depressed freight rates, a fleet of fairly constant size, and the 20 year useful lives of the ships.

The assistance programs available to Japanese flag operators have provided between \$100 and \$300 million per year to Japanese flag operators over the period 1971 to 1975. During 1973 and 1974, when tax allowances (depreciation and capital gains) were increased, the allowances, coupled with the ongoing benefits of investment assistance programs yielded the largest benefits to the industry.

By 1975, the reduced profitability of the industry curtailed the utility of tax allowances and reduced the principal government assistance to the level of the ongoing investment financing programs. However, by 1975 these programs also were not providing significant additional assistance to Japanese flag operators, in that new commitments for interest subsidies were no longer available and operators had reduced their use of the Japan Development Bank loans. As a result, the current Japanese assistance programs for national flag operators are likely to play a reduced role in the future development of the Japanese flag fleet, unless they are greatly altered by the SSRC study.

The potential repayment of interest subsidies and the reintroduction of the depreciation allowances into income will provide operators some incentives to construct Japanese flag vessels to offset tax liabilities from other sources and from the profits of chartered vessel operations. At the same time the reserves built up from past investments will play a role in providing some stability to Japanese operators during the current shipping recession.

A second factor affecting the future stability of the Japanese flag operators is the diversified structure of the subsidized companies. Past Japanese policies directed aids to carriers agreeing to merge into major groups. As a result, the tanker segments of the fleet are part of large shipping groups which provide an overall stability to the operators and significantly lessen the exposure of the tanker segments of the fleet. Other factors affecting future policies include a probable reduction in the level of Japanese flag construction, which will more likely continue to take the form of replacement and modernization as opposed to the previous rapid expansion in an effort to preserve the competitiveness of the Japanese fleet.

In mid-1977 the Japanese Shipowners Association (JSA) called for increased and altered government aid for the industry. While admitting to fleet performance that exceeded expectations, the JSA called for the introduction of free depreciation similar to that in the United Kingdom to improve the liquidity of owners and enable lines to reserve funds in periods of prosperity for recessions. The Association also called for reaction to COMECON undercutting of conference rates and the resulting abandonment of conferences by certain Western shipowners. Japanese owners also have requested overall support of Southeast Asian operations, fleet modernization and government support to resist cases of possible double taxation on Japanese terminals in foreign ports.

C. AIDS TO THE JAPANESE SHIPBUILDING INDUSTRY

In the 1970s, the Japanese shipbuilding industry has shifted toward an increasing concentration on export business. In the 1960s, the 100 percent financing for new oceangoing vessels provided to Japanese owners by the Japan Development Bank and city banks served to generate substantial business for Japanese shipyards since all of the orders by Japanese owners were placed in domestic yards. In addition, the Japanese owners not using the Japan Development Bank financing also placed their orders in domestic shipyards.

In the 1970s, orders from domestic owners continued at a strong pace through 1972 and although they declined somewhat in the latter half of the 1970-1975 period, export orders remained strong longer than the domestic orders did, supported in part by orders for vessels chartered to Japanese operators. Thus exports, which accounted for 45 percent of the ships and 63 percent of the gross tonnage delivered by Japanese yards in 1970, rose to 78 percent of the vessels and 84 percent of the gross tonnage delivered in 1975.

The measures employed by the Japanese government to aid the shipbuilding industry have included both direct and indirect aids, some of which were long-range programs and others which were more special-purpose and transitory in nature. Exhibit II-17 summarizes the principal aid programs for the Japanese shipbuilding industry. Each program is discussed in greater detail in the following section. Section C.2. addresses the effectiveness of the 1971-1975 programs, and Section C.3. summarizes recent and prospective programs.

Exhibit II-17

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE JAPANESE SHIPBUILDING INDUSTRY

1970-1975

i. Investment Financing Assistance

Program 1 - Japan Development Bank Modernization Loans

ii. Credit Assistance

Program 2 - Domestic Operator Assistance Programs
Program 3 - Export Import Bank Financing

iii. Tax Allowance Programs

Program 4 - Depreciation Allowances
Program 5 - Tax Free Reserves
Program 6 - Exchange Rate Allowances

iv. Direct Subsidies

v. Preference Programs

Program 7 - Customs Duty Protection

vi. Government Ownership

vii. Other

Program 8 - Export Insurance
Program 9 - Research and Development Support

1. Aid Programs

a. Principal Aids to the Japanese Shipbuilding Industry

(i) Investment Financing Assistance

Program 1 - Japan Development Bank Modernization Loans

Loans to shipyards at low interest rates have been made available for modernization or expansion of facilities. These loans were provided by the Japan Development Bank and city banks to encourage industrial development in key sectors of the economy.

Shipbuilding was one of these high priority industries, especially in the 1960s. As the cost of labor rose in Japanese shipyards, the equipment and yard modernization investments, encouraged by the government-assisted loans, attempted to offset the increasing wage scales with increases in productivity.

Exhibit II-18 summarizes the total investments by Japan's major shipyards over the period 1968 through 1975. The Japan Development Bank and other government agency participation in the total investment is also shown. Investments in shipyard facilities using Japan Development Bank loans totaled $158.4 million from 1970 to 1975, which represented 7.4 percent of the $2.1 billion of investment during the period.

Until 1968, these investments were available for general purpose improvements in shipyard production facilities, but in 1968, their application was restricted to the financing of special-purpose facilities, primarily the expensive VLCC production facilities. After 1972, the Japan Development Bank restricted its shipyard loans to investments under its regional credit program. This action was taken to comply with the OECD guidelines on aids to shipbuilding

Exhibit II-18

PLANT AND EQUIPMENT INVESTMENT AT MAJOR SHIPYARDS[1] AND PERCENTAGE FROM JAPAN DEVELOPMENT BANK[2]

1968-1975

(millions of dollars)

	Total	Japan Development Bank[2]	Percent of Total from Japan Development Bank[2]
1968	149.2	14.2	9.5
1969	132.6	7.0	5.3
1970	165.7	5.8	3.5
1971	404.8	11.9	2.9
1972	450.7	29.9	6.6
1973	468.4	41.4	8.8
1974	388.9	46.9	12.1
1975	266.6	22.5	8.4

[1] 38 major yards.

[2] Plus other government agencies.

Source: Handbook of Shipbuilding Statistics 1976, Ministry of Transport.

in its member countries.[8] Investment levels remained high, however, as the major shipyards invested in new facilities in more remote regions.

Despite the low level of participation by the government in the financing of investment, there is an implicit benefit to the shipbuilding companies derived from the government approval of a portion of the financing which potentially improves the availability of the remaining financing.

The benefit of the Japan Development Bank loans has been estimated at 4 percent of the loaned amount, which is the discounted equivalent of a 1 percent interest differential. Thus, the benefit to Japanese shipyards from the $158.4 million in JDB loans from 1970 to 1975 was approximately $6.3 million.

(ii) Credit Assistance

The principal government assistance to Japanese shipbuilders has been through the provision of funds to finance credits for domestic and export sales. The two principal programs available during the 1970-1975 period are:

- *The Japan Development Bank financing made available for Japanese flag construction, which was described earlier under aids to the national fleet; and*
- *Export-Import Bank financing for construction of vessels for export.*

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[8] *The OECD General Agreement for the Progressive Removal of Obstacles to Normal Competitive Conditions in the Shipbuilding Industry was designed to eliminate direct aid, discriminatory taxes, trade tariffs and barriers, and specific aid for investment in and restructuring of domestic shipbuilding industries. A summary of this Agreement may be found in Appendix D.*

Program 2 - Japan Development Bank Loans to Operators

For orders from domestic owners, the government provides the aids described in Section II.B.1. on aids to the national flag fleet. Since the ships ordered with these aid programs were all ordered in Japanese yards, the aid programs could be considered as assistance for the domestic shipbuilding industry also.

Program 3 - Export-Import Bank Financing

The Export-Import Bank, wholly owned by the Japanese government, provides financing with attractive terms to shipyards who are then able to offer inexpensive supplier credits to export customers by passing the savings on to the customer.

The Export-Import Bank loans were usually combined with loans from the city banks to cover up to 70 percent of the cost of a ship to be exported. The shipyards were responsible for financing 10 percent. The remaining 20 percent was supplied by the ship's owner. The required owner's participation was increased to 30 percent in 1975. The terms of the Export-Import Bank loans and city bank loans during the 1970-1975 period are described in Exhibit II-19.

Prior to 1968, the terms available for export orders were even more favorable. The Export-Import Bank loans covered 64 percent of a ship's price at an interest rate of 4 percent. The city banks provided loans for 16 percent of the cost at interest rates between 8.2 percent and 9.1 percent. These terms permitted the yards to offer financing to export customers for 80 percent of the vessel's cost to be repaid over eight years with an interest rate of about 4.8 to 5.0 percent.

As shown in Exhibit II-19 the percentage of the ship's price covered by the Export-Import Bank has decreased over time and the interest rates have increased.

Exhibit II-19

TERMS OF FINANCING FOR EXPORT SHIPS BUILT IN JAPANESE SHIPYARDS

Fiscal Years 1970-1975

	1970	1971	1972	1973	1974	1975	1976
Percent of Self-Financing Required of Owners	20	20	20	20	20	30	30
Percent of Financing Provided by Yards from Own Resources	10	10	10	10	10	10	10
Percent of Financing Provided by Export-Import Bank	49	42	42	42	38.5	33	27
Percent of Financing Provided by City Banks	21	28	28	28	31.5	27	33
Terms of Export-Import Bank Loans							
--Interest rate	4.75	5.0	6.875	6.875	6.875	7.1	*
--Repayment Period	8 years	8 years	8 years	8 years	8 years	7 years	7 years

*At interest rate necessary to yield current OECD rate.

Past terms were:	Effective Date	Minimum Paid by Ship Delivery	Maximum Period for Remainder	Minimum Interest Rate
	1/7/69	20%	8 Years	6.0%
	1/1/71	20%	8 Years	7.5%
	10/72	30%	7 Years	7.5%
	7/1/74	30%	7 Years	8.0%

Source: Handbook of Shipbuilding Statistics 1976, Ministry of Transport.

Exhibit II-20 summarizes the value of Japanese shipbuilding export orders and the trends in Export-Import Bank financing. During the period 1970-1975, the Export-Import Bank loans to shipbuilding decreased steadily. This has been in part a result of currency realignments which altered the demand for deferred yen financing during the period due to the strength of the currency, changing patterns of demand for ships, and the decreasing percentage participation by the Export-Import Bank, as down payment terms were raised from 20 percent to 30 percent in 1975.

Export-Import Bank financing became less attractive after 1971 when the yen appreciated from 360¥/U.S. dollars to 308¥/U.S. dollars. Potential borrowers having access to the dollar capital markets, preferred to borrow a weaker currency, dollars, rather than yen. Shortly after the oil crisis of late 1973, borrowing reverted to yen as opinion about the future relative strength of the yen reversed. The yen depreciated 9.8 percent from 265¥/U.S.$ in the third quarter of 1973 to 291¥/U.S.$ in the first quarter of 1974. Without a domestic energy supply, Japan's trade balance was expected to deteriorate steadily over the foreseeable future as oil prices and prices of other imported materials rose rapidly, impeding the growth and competitiveness of Japanese industry. The yen sank an additional 3 percent during 1974, ending the year at 300¥/U.S.$. Because of an unexpected strong economic recovery during 1976 and the relative unattractiveness of U.S. dollar assets in 1976 caused by low U.S. interest rates, confidence in the yen was improved and it rose from a low of 303¥/U.S.$ to 291¥/U.S.$ during 1976 and to 260¥/U.S.$ by mid-1977, regaining its position as a currency which borrowers attempt to avoid.

The attractiveness of Export-Import Bank financing has been diminished even further since mid-1975 as the prime lending rate has declined from 8.5 percent to 6.75 percent. Intermediate term financing for prime customers has been available at about 50

Exhibit II-20

JAPAN SHIPBUILDING EXPORT ORDERS AND EXPORT-IMPORT BANK FINANCING

Fiscal Years 1970-1975

(millions of dollars)

	1970	1971	1972	1973	1974	1975
Amount of Financing Provided by:						
Owners (cash payments)	1,201	1,287	5,367	7,426	1,406	1,448
Export-Import Bank	706	710	710	510	327	241
Other Banks	2,110	360	57	1,127	837	3,052
Total	4,017	2,357	6,134	9,063	2,570	4,741
Export-Import Bank Percent of Total	18%	30%	12%	6%	13%	5%

Source: Japan Ship Exporter's Association.

basis points above the prime short-term lending rate in recent years, making comparable financing available at 8.5 percent during 1975 and 7.25 percent during 1976[9]. The programs were substantially more attractive during 1973 and 1974, when, combined with an expected softening of the yen, intermediate-term rates were at levels of 9 percent and 9.75 percent, respectively.

However, during 1973 the proportion of cash payments was quite high as the currency factors dominated. In 1974 the Export-Import Bank percentage of the value of export orders increased even though the amount of financing decreased. By 1975, the use of the Export-Import Bank financing had decreased again.

Nevertheless, budgeted levels for Export-Import Bank financing have been increased significantly for 1976 and 1977. This is in part due to expected continued increases in the demand for deferred payments. A possible factor is the refinancing of orders taken during previous years.

Exhibit II-21 summarizes the yearly and outstanding ship credit loans of the Export-Import Bank. The 1971 and 1972 loan commitments were the highest levels before the 1976 and 1977 budgets. At the current lower Export-Import Bank percentage of the financing, these levels would support a substantially higher volume than in the past. Over the period 1970 to 1975, the outstanding loans averaged $2.5 billion.

At even a 2 percent savings estimate on the Export-Import Bank portion of the yard financing of supplier credits, the average value of the outstanding loans would have provided the yards an average benefit of approximately $50 million per year.

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[9] *100 basis points is equal to 1 percentage point.*

Exhibit II-21

JAPAN EXPORT-IMPORT BANK LOANS TO SHIP FINANCING
1966 to 1977
(millions of dollars)

Year	Total Outstanding	New Loans
1966	1,095	449
1967	1,405	487
1968	1,663	451
1969	2,049	603
1970	2,416	706
1971	2,628	710
1972	2,588	710
1973	2,653	510
1974	2,529	327
1975	2,279	241
1976	N.A.	711[a]
1977	N.A.	825[a]

[a] Budgeted

Source: Handbook of Shipping Statistics 1976, Ministry of Transport.

Japanese shipowners have not been allowed to utilize this financing for the construction of vessels for flags of convenience. However, the chartered fleet, much of which is under flags of convenience, controlled by Japanese operators and owned by others (e.g., Hong Kong shipowners), have utilized these credits during periods when yen financing was advantageous.

In the event of a buildup of an offshore fleet owned by Japanese operators, it is possible the export financing in yen would be attractive to them, if made available.

(iii) *Tax Allowance Programs*

Tax allowances are available to Japanese shipbuilders. Most of the programs have resulted in little benefit. The most significant action by the Japanese government in this area over the study period was a special program to reduce the impact on the industry of exchange losses resulting from the revaluation of the yen in 1971 as discussed under Program 6 below.

While not treated here as a principal program, customs duties are waived on imported materials used for ships to be built or repaired in Japan. Since most shipbuilding materials are produced domestically, this tax program has had little impact.

Program 4 - Depreciation Allowances

Tax benefits are made available to shipyards from special depreciation allowances. Japanese tax law contains provisions for special initial depreciation on certain capital items, many of which are applicable to the shipbuilding industry. For example:

Item	Special Initial Depreciation (percent)
Traveling cranes used to construct steel ships of more than 3,000 gross tons.	25%
Equipment for control of environmental pollution.	50%
Machinery for industrial production in underdeveloped areas.	33%

Since this depreciation reduces the basis value of the capital asset, the government recoups the lost tax revenue from the initial year over the remaining economic life of the asset. The benefit to industry from the special depreciation thus derives from the timing difference for the tax liability.

Assuming profitable operations, the additional depreciation shield has a current value of approximately 5 percent of the investment in such equipment. Based on the levels of investment shown in Exhibit II-18, the maximum benefit of the depreciation allowances can be estimated at an average of $20 million per year.

Operations were not profitable, however, due to exchange losses on a large percentage of the contracts early in the period. As a result, much of the benefit from the program was eliminated.

Program 5 - Tax Free Reserves

Special tax-free reserve funds are available to Japanese corporations. The Japanese tax law also contains provisions for special reserve funds that shelter earnings from tax liability, either temporarily or permanently. As for the depreciation allowances, the

Japanese shipbuilding industry did not receive any significant benefit from these reserve funds over the study period.

Program 6 - Exchange Rate Allowances

The Japanese government gave special tax relief to companies which suffered heavy exchange losses in the December 1971 revaluation. A special tax provision allowed for the immediate deduction of the entire exchange loss, estimated at $866 million, for tax purposes, even though the actual losses on foreign currency loans would not be incurred until the repayment of the loan was made in subsequent periods, and the losses carried forward for ten years. One-tenth of the exchange losses would then be added back to income for ten years along with any possible gains on loans after the 1971 revaluation which would be added back in the next year.

The Shipbuilders Association of Japan estimated the current value of the tax measure at 20 percent of the loss. This can be estimated as the equivalent of about $17 million per year, and is the result of the current value of the reserves established against the expected future period losses.

(iv) Direct Subsidies

There are no direct subsidies to the Japanese shipbuilding industry.

(v) Preference Programs

Program 7 - Customs Duty Protection

Customs duties protected imports of vessels under 10,000 gross tons from 1972 until April 1, 1975. Imported vessels under 10,000 gross tons were subject to customs duty at 6.0 percent of their declared valuation except for vessels transported from preferential countries. This measure was kept in force to protect the small and medium-sized yards, which specialize in the smaller vessel sizes, from foreign competition.

The duty rate was 7.5 percent before 1972, 10.5 percent before 1971, and 15 percent before 1969. Prior to 1969, customs duties were also applied to ships above 10,000 grt.

There were no imports of vessels under 10,000 grt while this import duty was in effect. The duty on vessels between 100 grt and 10,000 grt was eliminated as of April 1, 1975. During the last nine months of 1975, no oceangoing vessels under 10,000 grt were imported.

(vi) Government Ownership

None

(vii) Other

Program 8 - Export Insurance

Insurance is made available for exporters against failure of the buyer to make payments for certain reasons and against losses from the inability of the exporter to fulfill an export contract for certain reasons. Insurance policies are underwritten by the government's Ministry of International Trade and Industry (MITI) to insure against a wide range of commercial and political risks concerning export transactions. The Japan Ship Exporter's Association has a group insurance policy with MITI which is less cumbersome to administer than individual contracts with exporting yards. The Export-Import Bank requires shipyards to have government-approved export credit insurance in order to qualify for loans.

Program 9 - Aid to Research and Development

The government's Ministry of Transport sponsors the work of the Ship Research Institute which performs important theoretical and fundamental research. The annual budget for running the Institute is approximately $3 to $5 million.

b. Benefits of Japanese Assistance Programs to the Shipbuilding Industry

Exhibit II-22 summarizes the benefits of the principal assistance programs to the shipbuilding industry. The estimated level of benefit increased from $59.8 million in 1970 to $98.1 million in 1973. Approximately one-half the benefits consisted of Export-Import Bank financing while depreciation allowances on high investment levels and exchange rate allowances composed the bulk of the remaining benefits.

These values do not include the incentives to Japanese operators to construct in Japan's shipyards, which accounted for 29 percent of the volume over the six years, and which were estimated in Section B.1. to have provided benefits at a level of about $100 million per year including both the JDB low interest loans and interest subsidies.

2. Effectiveness of Aids to the Japanese Shipbuilding Industry

The direct assistance to the Japanese shipbuilding industry over the study period has been quite low considering the magnitude of this industry relative to all other countries.

The principal assistance to the industry has been through the provision of massive amounts of credit assistance coupled with a very large domestic demand. Particularly during the 1960s, 100 percent credit availability for Japanese flag operators coupled with a policy of controlling the ocean transport of a large proportion of the Japanese foreign trade provided a base load demand to the industry. In a similar fashion the development of an offshore controlled fleet contributed greatly to the export volumes of the industry. Export-Import Bank financing for export credit provided further assistance to this volume of demand, which again was tied to cargos in the Japanese trade.

Exhibit II-22

SUMMARY OF BENEFITS TO JAPANESE SHIPBUILDING INDUSTRY

1970-1975
(millions of dollars)

	1970	1971	1972	1973	1974	1975
Program 1: JDB Loans for Modernization	.2	.5	1.2	1.6	1.9	.9
Program 2: JDB Loans to Operators	a	a	a	a	a	a
Program 3: Export-Import Bank Financing	48.3	52.6	51.8	53.1	50.6	45.6
Program 4: Depreciation Allowances	8.3	20.2	22.5	23.4	19.4	13.3
Program 5: Tax Free Reserves	b	b	b	b	b	b
Program 6: Exchange Rate Allowances	0	0	17.0	17.0	17.0	17.0
Program 9: R&D Support	3.0	3.0	3.0	3.3	3.3	5.0
Subtotal	59.8	76.3	95.5	98.1	91.9	81.8
Program 7: Customs Duty Protection						
Program 8: Export Insurance						

[a] Included under Section B, assistance to the national fleet; estimated at $100 million per year.

[b] Due to other tax allowances, the benefits of this program are estimated as minimal.

As a result of the above, Japanese flag vessels and chartered tonnage carry approximately two-thirds of the total foreign trade of Japan and credit volumes of approximately $5 billion have in large part been applied to these fleets.

Only in 1974 and 1975 did the percentage of shipyard output for Japanese flag and controlled vessels fall below 60 percent. In those years, shipyard output had grown to almost twice the 1970 level.

The economies of scale resulting from these production volumes have allowed the Japanese shipbuilding industry to produce low cost vessels with assistance levels at less than 2 percent of the revenues of the industry by 1975.

During the period, a special program to diminish the effects of yen revaluation provided a supplemental cash flow to the industry. Beyond this the continued order volumes and credit availability provided the basic support.

As the financial strength of the industry increased, the credits were made available in amounts sufficient to maintain the competitiveness of Japanese newbuildings but far less than the funds required to significantly reduce ship prices. The reduced assistance to individual orders over time allowed a level volume of credit to support the expanding volume of output from increasingly efficient Japanese yards.

The shipbuilding industry has provided work for approximately 250,000 direct employees and an additional 328,000 in related industries (Exhibit II-23). Revenues reached $10 billion in 1975, and shipbuilding was one of the largest Japanese export industries in 1975 at $6.1 billion in export earnings.

The ongoing cost to the government has been under $100 million during the study period and could be estimated at twice that if the financing assistance to Japanese operators were considered.

Exhibit II-23

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY

SHIPBUILDING

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: Japan

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
		Deliveries[c]						
Total Ships[b]	- Number	440	403	417	411	498	502	2.7
	DWT	17,602	19,318	22,756	26,892	31,283	31,250	12.2
	GRT	9,698	10,510	12,487	14,191	16,708	16,229	10.8
Tankers	- Number	72	69	80	134	184	183	20.5
	DWT	10,102	9,495	10,386	16,410	23,650	24,894	19.8
	GRT	5,085	4,753	5,124	8,109	12,031	12,378	19.5
Bulk Carriers	- Number	145	180	219	160	167	130	-2.2
	DWT	5,653	8,371	11,194	9,461	6,199	4,724	-3.5
	GRT	3,331	4,762	6,362	5,324	3,652	2,785	-3.5
Freighters	- Number	222	151	110	113	145	187	-3.4
	DWT	1,841	1,448	1,155	1,014	1,427	1,629	-2.4
	GRT	1,279	989	964	743	1,016	1,053	-3.8
		Orders During Year[d]						
Total Ships[b]	- Number		532	322	682	465	613	3.6[a]
	DWT		46,165	29,133	56,824	26,478	26,875	-12.7[a]
	GRT							NA
Tankers	- Number		171	174	323	194	112	-10.0[a]
	DWT		29,380	26,180	47,191	21,033	16,001	-14.1[a]
	GRT							NA
Bulk Carriers	- Number		257	64	189	110	233	-2.4[a]
	DWT		15,852	2,286	8,187	4,018	8,213	-15.2[a]
	GRT							NA
Freighters	- Number		101	76	166	155	270	27.9[a]
	DWT		929	646	1,439	1,366	2,663	30.1[a]
	GRT							NA
		Cancellations During Year[e]						
Total Ships[b]	- Number	4	12	33	10	13	96	88.8
	DWT	131	1,335	2,805	1,166	2,266	17,087	164.9
	GRT							NA
Tankers	- Number	0	1	22	7	7	81	200.0[a]
	DWT	0	43	2,053	1,066	1,783	16,223	340.7[a]
	GRT							NA
Bulk Carriers	- Number	3	6	8	2	6	12	32.0
	DWT	116	1,241	718	65	483	849	48.9
	GRT							NA
Freighters	- Number	1	5	3	1	0	3	24.6
	DWT	15	51	34	35	0	15	0.0
	GRT							NA

Exhibit II-23

Shipbuilding (continued)

Country: Japan

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
	Orders Outstanding at Year-End[c]						
Total Ships[b] - Number	658	775	647	908	862	877	5.9
DWT	44,749	70,261	73,833	102,599	95,528	74,066	10.6
GRT					50,335	39,764	NA
Tankers - Number	135	236	308	490	493	341	20.4
DWT	24,225	44,067	57,808	87,523	83,172	58,056	19.1
GRT					43,004	30,040	NA
Bulk Carriers - Number	350	421	258	285	222	313	-2.2
DWT	18,364	24,604	14,978	13,639	10,975	13,615	-5.8
GRT					6,376	7,994	NA
Freighters - Number	173	118	81	133	143	223	5.2
DWT	2,160	1,590	1,047	1,437	1,376	2,395	2.1
GRT					937	1,700	NA
	Reported Financial Results[f]						
Revenues	NA	NA	NA	8,420	10,542	10,065[g]	6.1[h]
Profits	NA	NA	NA	184	163	174[g]	-1.8[h]
Outstanding Debt	NA	NA	NA	3,666	3,934	4,117[g]	3.9[h]
	Employment						
Employees at Year-End[i]	234,534	246,552	247,276	253,658	273,904	256,271	1.8
(No. of yards)	592	567	594	593	627	657	2.1

---

[a] 4-year annual growth rate, 1971-1975.

[b] Includes Combination Passenger/Cargo Vessels not shown separately.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Source: Derived from Orders Outstanding, Deliveries, and Cancellations. Approximate due to timing differences in sources.

[e] Source: Fairplay International Shipping Weekly, World Ships On Order, quarterly.

[f] Seven major shipbuilding companies.

[g] Based on first half results.

[h] 3-year annual growth rate, 1973-1975.

[i] Includes subcontractors for shipyard work. Employment in related industries at the end of 1975 equalled 328,627 workers.

The apparent benefits of this level of assistance far outweighs the comparable ratios for the other countries studied. Moreover, the industry output has continued to increase, while the level of assistance has not been altered considerably over that time. In evaluating the effectiveness of the current assistance, however, the prior injection of credit availability and the related high levels of demand must be considered.

3. Recent Programs and Trends

At the end of 1974 Japan had a backlog of 95.5 million dwt under construction or on order, down only 7 percent from the record 102.6 million dwt at the end of 1973. Tankers represented 57 percent of the vessels and 87 percent of the deadweight tonnage on the orderbook in Japan at the end of 1974 compared to 47 percent of the vessels and 77 percent of the deadweight on the world orderbook.

Despite the enormous backlog, Japan's position among world shipbuilders had begun to slip in 1974. While Japan delivered between 46 and 49 percent of world's gross tonnage output and between 49 and 52 percent of the deadweight output each year from 1970 to 1973, its share fell to 38 percent of the gross tonnage of new vessels ordered[10] in 1974. This came after three years of record successes in 1971-1973 when it captured 54 percent, 63 percent, and 49 percent of the new tonnage ordered, the last percentage representing a record 35.8 million grt in the boom year of 1973.

Although Japan's orderbook stood at 95.5 million dwt at the end of 1974, its shipbuilding capacity had also grown to record levels. Japanese yards delivered 31.3 million dwt of new vessels during 1974, and thus its order backlog represented only 3.1 years of work at the pace of 1974 deliveries. The other five major shipbuilding nations addressed in this study had backlogs at the end of 1974 that represented between 3.3 and 5.0 years of work at 1974 rates of delivery.

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[10] *Vessels of 100 grt or more, Lloyds Register of Shipping, Annual Report 1975.*

This backlog situation plus the higher-than-average concentration of tankers in the backlog caused concern in the Japanese shipbuilding industry. Although Japanese yards had suffered relatively few cancellations during 1974, their large tanker orderbook became increasingly vulnerable in 1975 as the tanker overcapacity situation worsened. Cancellations in Japanese yards during 1975 totaled over 17 million dwt, although some of the cancelled vessels were replaced with orders for other vessels of different types and sizes.

Japanese yards pursued several strategies for coping with the declining orderbook situation. Yards that had concentrated on building tankers and other specialized vessels broadened their marketing efforts to capture increased bulk carrier, containership, general cargo and other specialized vessel orders. The smaller Japanese yards perceived themselves as being particularly vulnerable as the large yards diversified into ship types and sizes that have been the strength of the small- and medium-sized Japanese yards. The smaller yards, in order to avoid takeovers or bankruptcies, have employed sharp price cuts as a means of securing orders to fill their production capacity and sought and won legislative restrictions on the use of VLCC building docks for the construction of small vessels. The price cuts have met with severe criticism from West European shipbuilders and even from some of the larger Japanese yards. Contract quotes from Japanese yards have been some 30 to 40 percent below those offered by their European counterparts on some vessel types on occasion, despite Japanese government efforts to reduce price differentials, particularly against orders by European shipowners.

Prices were raised by 5 percent in early 1977, which combined with the appreciation of the Yen in 1976-1977 may have raised effective Japanese prices by up to 15 percent. As discussed in subsequent chapters, assistance programs of other countries have attempted to reduce the differential as well.

Japan's share of orders for new vessels rebounded to 49 percent of the gross tonnage in 1975 from the 38 percent in 1974. In the most recent four quarters ending in April 1977, Japanese yards landed 52 percent, 74 percent, 59 percent and 52 percent, respectively, of the world's new orders in terms of deadweight tonnage. The Japanese have been particularly successful in landing orders for larger ship types. In the third quarter of 1976, for example, the Japanese took 90 percent of world bulk orders.

The Japanese government has been under heavy pressure from Japanese yards for assistance in coping with the declining world demand for ships. Simultaneously, other shipbuilding nations have been pressuring the Japanese government to curb the price cutting and the alleged dumping by Japanese yards and to implement capacity cutbacks in the Japanese shipbuilding industry.

The government's Ministry of Transport (MOT) commissioned a study to be performed by the Shipping and Shipbuilding Rationalization Council (SSRC) to investigate measures for alleviating the current problems of the maritime industries. In mid-1976, the SSRC made recommendations to the Ministry of Transport and subsequently the MOT issued guidelines to the 40 most important shipbuilding companies in Japan for their output levels in fiscal years 1977 and 1978. These guidelines are intended to stretch the current orderbook of the yards over a longer period of time. Under the MOT guidelines, large yards are expected to reduce capacity utilization to 65 percent of the peak output achieved in fiscal year 1974. Medium-size yards and small yards are expected to reduce utilization of capacity to 70 percent and 75 percent, respectively, of their peak output achieved in fiscal year 1975. These guidelines envision Japanese yards retaining their recent 50 percent share of world shipbuilding.

The SSRC study also called on the government to assist yards in relocating and retraining 100,000 employees from shipbuilding and ancillary industries for employment in other industries by 1980. Employment in shipbuilding was 256,271 in 1975 and in ancillary industries was 328,627 in 1975. The ancillary enterprises in Japan were unique in their dedication to fabricating ship components in support of the enormous shipbuilding industry. Steel fabricators, machine shops and engineering works have all suffered as declining volumes caused shipyards to end sub-contracts and bring such work in-house. Bankruptcies have occurred among the supporting industries as some firms failed to re-orient capacity successfully to non-marine markets.

The Ministry of Transport has asked for funds in its fiscal year 1977 budget to compensate and retrain 30,000 shipbuilding and associated industry workers. The 1977 Export-Import Bank budget also calls for $825 million of funding for Export-Import Bank loans, up from $711 million in fiscal 1976 and $241 million in fiscal 1975. The projected gross tonnage of export ships to be financed in fiscal 1977 is 4.67 million. The budget also requests $169 million in funds for Japan Development Bank financing to cover 0.70 million grt of newbuildings for domestic owners.

Other measures taken by the MOT to stem the overseas criticism of Japanese yards include the institution of a requirement that MOT approve new ship contracts. MOT also requires that yards utilize price guidelines which provide for approximately 8 percent escalation in ship construction costs during the period from contract signing to delivery. MOT approval for contracts will be withheld if the price does not meet the guidelines.

In 1976 Japan's major shipyards all recorded modest profits due to consolidation, but orderbooks had declined by 6 to 34 percent. Employment had decreased by 26,000 workers to 230,000 and by year-end the

Japanese orderbook stood at 32.8 million dwt against 1976 production of 30.4 million dwt. Thus, despite all actions and advantages, the Japanese shipbuilding industry backlog was reduced by 44 million dwt and more than one year's work in 1976, reflecting some 12 million dwt in cancellations. Future shiporders, no matter how won, are sorely needed and despite any controls, Japanese competition will remain formidable.

III. THE MARITIME AIDS OF THE UNITED KINGDOM

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III. THE MARITIME AIDS OF THE UNITED KINGDOM

A. SUMMARY

1. Background

The fleet of the United Kingdom ranked third in the world in deadweight tonnage behind Liberia and Japan in 1975. Between 1966 and 1975, the fleet registered only a slight decline in world share of deadweight tonnage registered. The large additions to the fleet during the period were applied about evenly to growth and replacement resulting in only minor reductions in the average age of the U.K. fleet.

As noted in the Introduction, the U.K. national fleet dominates the national shipbuilding industry. Deliveries to the U.K. national fleet averaged about four times the total output of the national shipbuilding industry. A large proportion of the shipbuilding output enters the U.K. fleet, averaging about two-thirds of shipyard output over the period 1970-1975. The U.K. is very much a net ship importer in that national shipyard deliveries to the U.K. fleet represented only about a quarter of the total deliveries to the fleet. Thus, based on levels of activity, the shipping industry has been far more significant in the U.K. than shipbuilding, although levels of employment have been comparable for the two industries. Exhibits III-1 and III-2 depict the performance of U.K. fleet and shipyards during the study period.

An island nation like Japan, the United Kingdom has a long history of maritime activity. The United Kingdom national fleet, without the partially-captive national foreign trade cargo market available to Japanese operators, has maintained a rate of growth almost equal to Japan over the study period and obtained over half of its receipts from the cross-trades.

In contrast to Japan, the U.K. shipping industry, which also employs a significant volume of chartered tonnage, has tended to increase the percentage of U.K. owned and registered vessels while the Japanese operators have rapidly increased their chartered fleet.

Exhibit III-1

SUMMARY OF NATIONAL FLAG FLEET AND SHIPBUILDING ACTIVITY
1970-1975

UNITED KINGDOM

	1970	1971	1972	1973	1974	1975
Total Deliveries - U.K. Shipyards						
Vessels	71	65	61	59	40	45
DWT (000)	1,881	2,087	1,849	1,639	2,144	2,265
GRT (000)	1,178	1,246	1,070	1,025	1,210	1,261
Deliveries for U.K. Registry from U.K. Shipyards						
Vessels	55	42	45	41	23	25
DWT (000)	1,444	1,484	1,158	1,043	1,841	1,511
GRT (000)	916	895	695	671	1,013	828
Deliveries for U.K. Registry from World Shipyards						
Vessels	92	111	132	120	74	68
DWT (000)	4,993	5,027	5,213	6,366	6,634	4,991
GRT (000)	2,819	2,899	3,335	3,737	3,678	2,953
U.K. Owners Share of U.K. Shipyards Deliveries (Percent)						
Vessels	77	65	74	69	58	56
DWT (000)	77	71	63	64	86	67
GRT (000)	78	72	65	65	84	66
U.K. Shipyards Share of Deliveries to U.K. Owners (Percent)						
Vessels	60	38	34	34	31	37
DWT (000)	29	30	22	16	28	30
GRT (000)	32	31	21	18	28	28

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce, annual.

Exhibit III-2

UNITED KINGDOM FLEET

SHARE OF WORLD FLEET AND AVERAGE AGE

1966-1975

	1966	1968	1970	1972	1974	1975
-----------------Vessels Registered Under United Kingdom Flag---------------------- Percent of World Fleet						
Total Fleet[1]	10.8	9.5	8.9	7.7	7.2	6.9
Tankers	11.6	10.9	10.3	9.5	9.1	8.6
Bulk Carriers	14.1	11.2	10.0	9.2	8.1	8.0
Freighters	9.9	8.7	8.1	6.8	6.2	5.9
------------Deadweight Tonnage Registered Under United Kingdom Flag-------------- Percent of World Fleet						
Total Fleet[1]	11.5	11.0	11.3	10.9	10.5	9.9
Tankers	12.0	12.4	13.6	12.7	12.0	10.9
Bulk Carriers	9.9	8.9	8.6	9.9	9.9	9.7
Freighters	11.2	10.2	9.7	8.4	7.6	7.2
-----------------United Kingdom Fleet - Average Age of Vessels------------------- (Years)						
Total Fleet[1]	12	11	11	10	10	10
Tankers	10	9	9	9	9	9
Bulk Carriers	10	9	9	8	8	8
Freighters	12	11	12	10	11	11
---------------------World Fleet - Average Age of Vessels------------------------ (Years)						
Total Fleet[1]	17	13	13	12	12	12
Tankers	11	11	11	11	11	11
Bulk Carriers	11	9	8	8	9	9
Freighters	16	15	13	13	13	13

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[1] Includes Combination Passenger/Cargo not shown separately.

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce, semi-annual.

The national shipbuilding industry, in contrast, has shown relatively little growth and overall has experienced poor financial results.

2. Conclusions

Aid to the U.K. shipping industry increased significantly over the period 1970 to 1975. During the study period direct investment grants totaling $1.1 billion were paid out from a program that was cancelled in 1971. Simultaneously, the British system of free depreciation on the fleet investments provided increasing benefits, estimated at levels of approximately $100 million per year after 1972.[1]

Beyond these two programs, guarantees of loans to U.K. owners provided potential benefits of between $23 and $30 million per year. These guarantees, however, were primarily employed during the study period for special situations, such as the problems of Maritime Fruit Carrier's overextension.

The significant direct aid to ship operators, followed by the indirect benefits of the depreciation allowances have contributed to the growth of a large U.K. fleet. Assisted by low wage scales relative to other Western countries and a devaluing currency the fleet has been able to compete effectively in world trades and earn substantial contributions to the U.K. current account. Exhibit III-3 portrays the activity of the U.K. fleet expansion relative to the world and the expansion of the bulk fleets and replacement of freighters.

The aid programs to the shipbuilding industry were aimed at maintaining its competitiveness for orders from both U.K. and foreign owners. The massive programs for the shipping industry translated into little benefit for the shipbuilding industry while the specific aids to shipbuilding (e.g., construction grants and credit assistance) fell short of providing sufficient strength to the industry due to low productivity, labor strife, a wide range in the ages of production

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[1] *Dollar figures in this chapter have been converted at the 1975 exchange rate of 2.2218 English pounds to the dollar.*

Exhibit III-3

COMPARISON OF FLEET GROWTH - UNITED KINGDOM AND WORLD

1970-1975

(deadweight tons in millions)

GROWTH IN REGISTERED FLEET

	United Kingdom			World		
	Deadweight Tons		Percent Change	Deadweight Tons		Percent Change
	1970	1975		1970	1975	
Total Fleet	37.1	54.9	48%	327.0	556.6	70.2%
Tankers	20.9	32.9	57	153.1	302.2	97.4
Bulk Carriers	6.6	14.5	120	77.2	150.1	94.5
Freighters	9.0	7.3	(19)	92.4	101.2	9.6

NEWBUILDING DELIVERIES TO THE FLEET

	United Kingdom		World	
	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT
Total Fleet	28.2	76%	254.8	78%
Tankers	16.6	79	157.1	103
Bulk Carriers	9.5	44	73.5	95
Freighters	2.2	24	24.0	26

SHARE OF NEWBUILDING DELIVERIES USED FOR NET FLEET GROWTH AND FOR VESSEL REPLACEMENT

	United Kingdom		World	
	Percent for Net Fleet Growth	Percent for Vessel Replacement	Percent for Net Fleet Growth	Percent for Vessel Replacement
Total Fleet	63.2	36.8	90%	10%
Tankers	72.4	27.6	95	5
Bulk Carriers	83.1	16.9	99	1
Freighters	0.0*	100.0*	37	63

*All new deliveries were used to replace vessels deleted from the 1970 fleet.

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

methods and equipment, and inflation. The shipbuilding industry was nationalized on July 1, 1977. Additional grants and government guarantees have been necessitated in order to maintain large segments of the industry, until the nationalized industry is reorganized.

The low value of the British pound, will tend to make orders in the U.K. attractive, particularly when combined with the recent grants. At the same time, British shipowners will be faced with potentially higher costs for construction overseas. The large percentage of receipts in harder currencies from the cross-trades, however, will minimize some of the costs of ship importing.

B. AIDS TO THE BRITISH NATIONAL FLEET

Over the past ten years, the principal U.K. aid programs for the national flag fleet have shifted away from direct subsidy grants to U.K. operators and towards indirect programs in the form of tax incentives for investing in new vessels.

Government aid programs for the U.K. flag fleet are primarily oriented towards encouraging the acquisition of modern vessels by U.K. owners. The large proportion of high-productivity new vessels in the fleet is expected to promote efficiency in operations that should offset cost advantages accruing to fleets employing lower wage crews. The U.K. does not employ operating subsidies except for minor sums paid to operators in selected domestic trades.

In addition, financing assistance has been provided for construction in the U.K. However, inasmuch as the requirements of the U.K. national fleet far surpass the shipbuilding output, this aid is primarily aimed at maintaining the competitiveness of the domestic shipbuilding industry for U.K. orders.

Exhibit III-4 outlines the principal aid programs to the British national fleet. These programs are discussed in detail in the following section.

Section B.1. below discusses the aid programs in effect between 1971 and 1975. Section B.2. reviews the effectiveness of those aids. Section B.3. addresses recent and prospective programs.

1. Aid Programs

a. Principal Aids to the British National Fleet

(i) Investment Financing Assistance

Program 1 - Government Loan Guarantees

U.K. operators have had access to government guarantees on loans from commercial lending institutions for the purpose of constructing new vessels or mobile offshore installations in U.K. shipyards. The interest on the guaranteed loans is at a fixed rate determined by the government. The credit terms are similar to those of the OECD Export Credit Understanding for Ships.

Exhibit III-4

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE BRITISH NATIONAL FLEET

1970-1975

i. Investment Financing Assistance
    - Program 1 - Government Loan Guarantees

ii. Credit Assistance

iii. Tax Allowance Programs
    - Program 2 - Free Depreciation

iv. Direct Subsidies
    - Program 3 - Cash Investment Grants
    - Program 4 - Domestic Operating Subsidies

v. Preference Programs

vi. Government Ownership

vii. Other

The intent of this program was to give U.K. operators access to credits from domestic yards at terms comparable to the financing terms available abroad. This guarantee program was administered by the Shipping Industry Board until its dissolution in 1972. Administration of loan guarantees was then transferred to the Department of Trade and Industry under the Home Credit Guarantee Scheme of the Industry Act of 1972.

Under the Home Credit Scheme of the Industry Act of 1972, the loan to a U.K. owner is granted by the purchaser's bank through arrangements with the clearing (commercial) banks of England and Scotland. The clearing banks may refinance with the Secretary of State for Industry any loans to shipowners over a certain minimum.

Guarantees given under the Industry Act of 1972 to U.K. owners are shown in Exhibit III-5. The terms of loans to U.K. owners under the Home Credit Scheme are shown in Exhibit III-6.

The prevailing interest rates available to U.K. owners on non-guaranteed first mortgage loans during the 1970-1972 period were approximately 2 to 3 percentage points above those available through the government-guaranteed loan programs, and during 1973-1976 the difference in interest rates rose to 4 to 9 percentage points. An indication of the benefit derived from the guaranteed loans can be observed from Exhibit III-7.

Through the end of the 1975-1976 financial year, there have been no defaults on loans guaranteed under the Home Credit Scheme of the Industry Act of 1972. Even though the guarantees had been applied to such special situations as vessels on order for financially troubled Maritime Fruit Carriers, defaults are not considered if the obligations are assumed by second parties.

Thus, the cost to the government of providing these guarantees has thus far been nil. The government's risk exposure is substantial, however, standing at $1.8 billion at March 31, 1976.

Exhibit III-5

U.K. GOVERNMENT GUARANTEES ON LOANS TO U.K. OWNERS UNDER SHIPBUILDING INDUSTRY ACT AND HOME CREDIT SCHEME OF THE INDUSTRY ACT OF 1972

Financial Years 1972/73 - 1975/76

(1 April - 31 March)

	1972/73	1973/74	1974/75	1975/76
Guarantees Outstanding[1] at Beginning of Financial Year				
--Number	226	255	286	342
--Amount ($ millions)	$1,192	$1,415	$1,484	$1,902
Guarantees Given[1] During Financial Year				
--Number	36	42	78	48
--Amount ($ millions)	$ 449	$ 228	$ 523	$ 435
Guaranteed Loans Repaid[1] During Year				
--Number	(7)	(11)	(22)	(22)
--Amount ($ millions)	($122)	($133)	($168)	($198)
Guarantees Outstanding at End of Financial Year[2]				
--Number	255	286	342	368
--Amount ($ millions)	$1,415	$1,484	$1,902	$1,818
Exchange Rate Impact[3] on Guarantees Outstanding ($ millions)	($104)	($26)	$63	($321)

[1] At exchange rate prevailing on January 1 closest to beginning of financial year.

[2] At exchange rate prevailing on January 1 closest to end of financial year.

[3] Difference between guarantees outstanding at year-end calculated at year-end exchange rates (closest to January 1) and the same balance calculated at exchange rates prevailing at the beginning of the financial year (closest to January 1).

Exhibit III-6

CONDITIONS OF LOANS TO U.K. OWNERS GUARANTEED BY SECRETARY OF STATE FOR INDUSTRY

Financial Year

(April 1 - March 31)

	1972/73	1973/74	1974/75	1975/76
Portion of Vessel's Cost Covered by Guaranteed Loan (%)	80	80	80/70*	70
Maximum Repayment Period (years)	8	8	8/7*	7
Maximum Interest Rate (percent per annum)				
--Actual	7.0	7.0	7.0/7.5*	7.5
--Effective (including departmental and bank charges	7.5	7.5	7.5/8.0*	8.0

*New terms on guaranteed loans were put into effect on July 1, 1974.

Source: Reports to Parliament, Industry Act 1972.

Exhibit III-7

COMPARISON OF LOANS TO U.K. OWNERS UNDER GOVERNMENT GUARANTEE PROGRAMS TO LOANS WITHOUT GUARANTEE PROVISIONS

Financial Years 1972/73 - 1975/76

(April 1 - March 31)

	1972/73	1973/74	1974/75	1975/76
Guaranteed Loans to U.K. Owners made During Financial Year ($ millions	$449	$228	$523	$435
Effective Interest Rate on Guaranteed Loans (Percent per Annum)	7.5	7.5	7.5/8.0	8.0
Industrial Bond Yield[1] (Percent per Annum)	9.7	11.4	16.3	16.0
Estimated Total Benefit to Borrowers from Differential Interest Rate Over Life of Loans ($ millions)	$38[2] $30[3]	$35[2] $27[3]	$173[2] $150[3]	$126[2] $110[3]
Total Outstanding Loans ($ millions)	$1,192	$1,415	$1,484	$1,902
Estimated Annual Benefit at an Average 2% Interest Spread on Outstanding ($ millions)	$23.8	$28.3	$29.7	$38.0

[1] Industrial Bond Yield pertains to calendar years, i.e., calendar year 1972 is reported in the column entitled "financial year 1972/73"

[2] Assumes borrowers' cost of capital of 8 percent per annum

[3] Assumes borrowers' cost of capital of 12 percent per annum.

Source: Exhibits III-5 and III-6.

(ii) Credit Assistance

Credit assistance is not applicable to national flag operators.

(iii) Tax Allowance Programs

Program 2 - Free Depreciation

The Cash Investment Grant Program (discussed in the next section) was the principal element of aids to the U.K. national fleet in effect at the beginning of the 1970-1975 period. Because the Cash Investment Grant program became too expensive, the government eliminated it in 1971.

Free depreciation had been available to U.K. shipowners from 1965[2], but became relatively more important as the capital investments ballooned. The effective change in programs from a direct aid in the form of investment grants to an indirect aid in the form of liberal write-off provisions against income was a major shift in the type of aid programs employed by the U.K. government to assist the fleet, but the basic government policy behind each of these programs appears not to have changed. The free depreciation schedule also encourages investment in new ships as the primary means of making the U.K. fleet competitive, the same basic policy that motivated the Cash Investment Grant program.

The free depreciation schedule caused some changes in the traditional financing patterns for ships in the U.K. The clearing banks, which made ship loans to U.K. operators, found the depreciation schedule to be a valuable source of tax shelter for their earnings. Since they had few depreciable assets, they became interested in owning vessels and leasing them to operators. The banks thus took advantage of the depreciation shield and passed some of these tax savings on to the operators in the form of favorable leasing terms. Other groups of investors were also attracted to the depreciation shelters. Some large U.K. operators felt that this attracted unknowledgeable interests to shipping with potentially bad results until the use of the depreciation was somewhat constrained.

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[2] *The initial provisions were developed in 1965; codified under the Capital Allowances Act, 1968; and the system simplified in October 1970.*

The free depreciation schedule does not change the amount of a vessel owner's tax liability but does shift significantly the timing of that tax liability. The benefit value is between the alternative cash flows using "normal" depreciation and accelerated depreciation. If one uses 8-year straight line depreciation as a baseline for "normal" depreciation, the savings to U.K. owners from the use of free depreciation may be estimated at approximately 11 percent of capital investment at 8 percent cost of capital. When applied to the capital expenditures of the industry, the potential benefits are significant, as shown in Exhibit III-8.

The U.K. assistance programs do not include deferred or tax free reserves for capital gains. Hence, the incentives for reinvestment by profitable companies resulting from the rapid depreciation are oriented more towards growth than towards replacement. The effects of devaluation and relatively low operating costs combined with rapid depreciation and the cash investment grants discussed in the next section have permitted a high proportion of deliveries to the U.K. fleet to be net growth additions to a rapidly expanding merchant marine.

(iv) Direct Subsidies

Program 3 - Cash Investment Grants

The Cash Investment Grant Program of the 1966 Shipbuilding Act benefited U.K. owners ans was the largest U.K. aid program in terms of expenditures during the latter half of the 1960s and early 1970s. The program

Exhibit III-8

ESTIMATED BENEFIT OF U.K. SHIPPING FROM FREE DEPRECIATION

(millions of dollars)

	Net Fixed Capital Expenditure	Estimated Benefit[a]
1970	626.1	68.9
1971	660.5	72.7
1972	951.2	104.6
1973	1,092.2	120.1
1974	951.2	104.6
1975[b]	928.8	102.2

[a] Estimated at 11 percent of capital investment. Assumes 8 percent cost of capital, 8-year straight line depreciation versus free depreciation taken at end of year one.

[b] Annual level estimated by doubling first half 1975 amounts.

Source: British Shipping Statistics 1975, General Council of British Shipping.

goal was vessel acquisition, granting 20 percent of vessel cost in 1966, 25 percent of vessel cost in 1967 and 1968 and again 20 percent in 1969 through 1971. In 1972 some $230 million of commitments were still outstanding after the program's cancellation due to its high costs in 1971. The bulk of the expenditures under this program occurred after 1970, as can be seen in Exhibit III-9.

The Cash Investment Grant program under the 1966 Industrial Development Act provided about $325 million between 1966 and March 31, 1970 in grants to U.K. operators and U.K. branches of foreign shipping companies for the purpose of acquiring ships to be registered under the U.K. flag. These grants were equal to 20 percent or more of the cost of ships delivered under the program. The intention of the program was to expand and modernize the U.K. fleet by the addition of new capital-intensive vessels and to provide a substantial number of orders for the U.K. shipyards.

In practice, the program succeeded in getting significant amounts of new tonnage registered under the U.K. . flag, but the incentives under the program were not especially well suited to having owners place their orders with U.K. shipyards. This was primarily due to the fact that the requirements of the U.K. fleet exceed the capacity of U.K. shipyards several fold. With the cash grants from the U.K. for 20 percent of the ship's price in 1966 (25 percent in 1967-1968, 20 percent in 1969-1971) and favorable terms on export credits available from foreign yards through their governments' aid programs, U.K. owners were able to order new vessels abroad with little or no capital outlay on their own part. Exhibit III-10 illustrates the effects of the program on the U.K. fleet and U.K. shipyards.

As can be observed from Exhibit III-10, the deliveries to the U.K. fleet from foreign yards increased greatly while the deliveries from U.K. yards rose at a lower rate as evidenced by the declining U.K. yard share of

Exhibit III-9

CASH INVESTMENT GRANT EXPENDITURES
(1967-1977)

Financial Year (1 April-31 March)	Investment Grant Expenditure ($ millions)
1967-1968	$ 50.3
1968-1969	106.8
1969-1970	167.9
1970-1971	146.8
1971-1972	254.6
1972-1973	229.1
1973-1974	233.2
1974-1975	142.1
1975-1976	94.3
1976-1977 and thereafter	51.8 (estimated)
Totals:	
1967-1968 through 1969-1970	325.0
1970-1971 through 1975-1976	1,100.1
1976-1977 and thereafter	51.8 (estimated)
Total Cash Investment Grant Program	$1,476.9

Source: General Council of British Shipping.

Exhibit III-10

UNITED KINGDOM

REGISTERED FLEET AND SHIPYARD ACTIVITY

1965-1973

(GRT in millions)

	1965	1966	1967	1968	1969	1970	1971	1972	1973
U.K. Fleet									
Deliveries from U.K. Yards	.92	.78	.58	.45	.66	1.04	.84	.86	.70
Deliveries from Foreign Yards	.30	.45	.80	2.05	2.15	1.65	2.40	2.85	3.50
Total Deliveries	1.22	1.23	1.38	2.50	2.81	2.69	3.24	3.71	4.20
Percent from U.K. Yards	75%	63%	42%	18%	23%	39%	26%	23%	17%
U.K. Shipyards									
Deliveries to U.K. Fleet	.92	.78	.58	.45	.66	1.04	.84	.86	.70
Deliveries for Export	.15	.30	.72	.45	.38	.20	.40	.37	.32
Total	1.07	1.08	1.30	.90	1.04	1.24	1.24	1.23	1.02
Percent to U.K. Fleet	86%	72%	45%	50%	63%	84%	68%	70%	69%

Source: Lloyd's Register of Shipping, Annual Report, 1973
Gross tonnage launched annually.

deliveries to the national fleet. During the early 1970s, while the largest expenditures were made, the absolute level of U.K. shipbuilding did rise slightly, based on a higher level of deliveries to the home fleet reflected in the higher shares of U.K. deliveries to the national fleet. Nevertheless, it is clear that the bulk of the program funds was applied outside of the U.K. yards.

Program 4 - Domestic Operating Subsidies

Domestic operating subsidies are paid to coastal and ferry services to the Scottish Highlands and Islands, services considered essential for social reasons that would be unecomomic otherwise. The estimated level of these subsidies is $2.0 million per year.

(v) Preference Programs

None

(vi) Government Ownership

None

(vii) Other

None

b. Benefits of British Assistance Program

Exhibit III-11 summarizes the benefit of U.K. owners from the aids to the fleet described above.

The direct and indirect aids to the U.K. fleet totaled more than $380 million in 1973. At this rate, the U.K. would pay approximately $55 in aid for each deadweight ton delivered to the fleet in the six-year period covering 1970 to 1975. Deliveries during that period totaled 20.2 million DWT of tankers, 10.4 million DWT of bulk carriers, and 2.5 million DWT of freighters.

Exhibit III-11

SUMMARY OF BENEFITS TO UNITED KINGDOM OWNERS
1970-1975
($ millions)

	1970	1971	1972	1973	1974	1975
Program 1: Guarantees on Loans to United Kingdom Owners	23.8[a]	23.8[a]	23.8	28.3	29.7	38.0
Program 2: Free Depreciation Schedule	68.9	72.7	104.6	120.1	104.7	102.2
Program 3: Investment Grant Program	146.8	254.6	229.1	233.2	142.1	94.3
Total Benefit to United Kingdom Fleet[b]	239.5	351.1	357.5	381.6	276.4	234.5

[a] Estimated at 1972 level.

[b] Excluding Program 4 - Domestic Operating Subsidies.

The main elements included in the $1.84 billion in total aids for 1970-1975 were previously committed cash investment grants of $1.1 billion, savings of $167 million on government guaranteed loans, and savings of $573 million due to free depreciation.

2. Effectiveness of Aids to the British National Fleet

From the mid-1960s to the early 1970s, the U.K. fleet increased 62 percent in DWT registered and increased by about one-third in gross tonnage registered. In the three years from 1972 to 1975, the deadweight tonnage of the fleet increased another 26 percent and the gross tonnage, 22 percent (Exhibit III-12). The average age of the vessels in the U.K. fleet declined from 12 years in 1966 to 10 years in 1972, as large numbers of small post-war general cargo vessels were replaced , and remained at 10 years through 1975.

Tanker deadweight tonnage led fleet growth, more than doubling between 1966 and 1972. The average age of tankers in the fleet declined from 10 years to nine years. The deadweight tonnage of the bulk carrier fleet almost tripled during the same period, and the average age of this fleet segment fell from 10 years to eight years. The freighter fleet, however, declined 23 percent in deadweight tonnage, but replacement of some older tonnage by new vessels lowered the average age of the freighter fleet from 12 years to 10 years. The average ages of the tanker and bulk carrier fleets remained at nine years and eight years, respectively, through 1975, but the freighter fleet's average age increased to 11 years in 1975.

The U.K. shipping industry provides major contributions to the U.K. current account. Exhibit III-13 summarizes the net receipt and disbursements of the owned and registered fleet and the total shipping industry including chartered vessels. Contributions of the owned and registered fleet are higher than for the total industry due to the disbursements outside the U.K. for charters. Nevertheless, the industry provided between $1.1 billion and $1.8 billion annually over the study period, while the contribution of the U.K. fleet ranged from $1.3 to $2.0 billion.

Exhibit III-12

UNITED KINGDOM FLEET
TONNAGE REGISTERED, 1966-1975

Vessels of 1,000 GRT or More Registered at December 31

(DWT, GRT in millions)

		1966	1972	1975
Total Ships	- DWT	26.8	43.5	54.9
	- GRT	20.0	27.2	33.2
Tankers	- DWT	11.8	24.4	32.9
	- GRT	7.7	13.6	18.3
Bulk Carriers	- DWT	3.8	10.8	14.5
	GRT	2.6	6.5	8.5
Freighters	- DWT	10.2	7.9	7.3
	GRT	7.9	6.3	5.9

Source: Merchant Fleets of the World,
Maritime Administration,
U.S. Department of Commerce.

Exhibit III-13

EARNINGS IN FOREIGN TRADES LESS DISBURSEMENTS BY U.K. OWNED AND REGISTERED FLEET AND U.K. SHIPPING INDUSTRY

1970-1974

(millions of dollars)

	U.K. Owned and Registered Ships			U.K. Shipping Industry		
	Receipts	Disbursements Abroad	Net	Receipts	Disbursements Abroad	Net
1971	1,983	681	1,302	3,299	2,165	1,133
1972	2,035	736	1,299	3,199	2,038	1,161
1973	2,511	848	1,663	4,044	2,497	1,546
1974	3,263	1,250	2,012	4,955	3,172	1,784

Exhibit III-14

REVENUES OF U.K. SHIPPING INDUSTRY TOTAL AND FROM U.K. OWNED AND REGISTERED SHIPS

	Receipts of U.K. Shipping Industry	Receipts from U.K. Owned and Registered Ships	Percent of Shipping Industry
1971	3,299	1,983	60%
1972	3,199	2,035	64%
1973	4,044	2,511	62%
1974	4,955	3,263	66%

Exhibit III-15

PERCENTAGE OF FREIGHT RECEIPTS FROM U.K. EXPORT AND IMPORT TRADES AND FROM CROSSTRADES

1971-1974

(percent)

	U.K. Owned and Registered Fleet			U.K. Shipping Industry		
	Exports	Imports	Crosstrades	Exports	Imports	Crosstrades
1971	23	26	51	14	25	61
1972	23	30	47	14	25	61
1973	21	28	50	13	24	63
1974	23	23	54	14	23	63

Over the study period the receipts from owned and registered vessels increased from 60 percent to 66 percent of total industry receipts, (see Exhibit III-14). However, the owned and registered fleet did not show an appreciable increase in the percentage of total receipts in the U.K. foreign trade. As shown in Exhibit III-15, the receipts of the U.K. owned and registered fleet varied from 47 to 54 percent in the cross-trades, while the total industry showed between 61 and 63 percent of receipts in the cross-trades.

The U.K. fleet share of national waterborne foreign commerce, as a result, remained steady over the period at approximately 31 percent of imports and 46 percent of exports. Most of the increase in the U.K. shipping industry thus entered the cross-trades while the portion active in the national foreign trade maintained a consistent share of the U.K. export and import volume.

Comparing the U.K. fleet to the nations trading requirements, the national fleet has carried between 30 and 40 percent of the U.K. foreign trade. The national fleet's capability could accommodate almost the entire U.K. foreign trade if no capacity were dedicated to cross-trading, while the industry, including chartered vessels, has capacity that far exceeds the U.K. foreign trade requirements (see Exhibits III-16 and 17).

3. Recent and Prospective Programs

The U.K. fleet growth has slowed due to the recession and the resulting overcapacity situation in the tanker market and to a lesser extent in the dry bulk and general cargo markets. U.K. owners have reduced their orders for new tonnage causing outstanding orders for the U.K. fleet to decline from 18.7 million DWT at the end of 1973 to 14.5 million DWT at the end of 1974 to only 6.4 million DWT at the end of December 1976. The December 1976 total, however, still places the U.K. third in the world in terms of tonnage on order for the national flag fleet. Only Liberia with 19.3 million DWT and Norway with 9.0 million exceeded the U.K.

Exhibit III-16

U.K. FLAG SHARE OF U.K. FOREIGN TRADE BY TYPE OF CARGO

(1970-1975)

	1970	1971	1972	1973	1974[a]	1975
General Cargo						
1. U.K. Imports						
--Total Tons (millions)	30.2	29.6	31.7	35.3	36.2/29.1	26.5
--Tons on U.K.-flag Vessels (millions)	12.1	11.2	11.4	12.7	13.4/11.1	10.1
--U.K.-flag Share of Total (%)	40	38	36	36	37/38	38
2. U.K. Exports						
--Total Tons (millions)	20.1	22.1	22.3	25.1	25.4/22.1	20.6
--Tons on U.K.-flag Vessels (millions)	9.3	9.3	8.9	10.3	10.9/9.5	8.9
--U.K.-flag Share of Total (%)	46	42	40	41	43/43	43
Dry Bulk						
1. U.K. Imports						
--Total Tons (millions)	45.1	46.4	46.6	49.7	48.1/54.4	46.6
--Tons on U.K.-flag Vessels (millions)	17.6	20.4	18.6	16.4	13.9/16.3	15.4
--U.K.-flag Share of Total (%)	39	44	40	33	29/30	33
2. U.K. Exports						
--Total Tons (millions)	12.0	9.6	9.4	12.2	12.7/15.5	15.8
--Tons on U.K.-flag Vessels (millions)	5.6	3.9	4.5	5.7	6.2/7.4	7.4
--U.K.-flag Share of Total (%)	47	41	48	47	49/48	47
Liquid Bulk						
1. U.K. Imports						
--Total Tons (millions)	124.6	130.5	127.6	136.1	129.6/130.4	104.1
--Tons on U.K.-flag Vessels (millions)	33.6	35.3	33.2	38.1	33.7/33.9	30.2
--U.K.-flag Share of Total (%)	27	27	26	28	26/26	29
2. U.K. Exports						
--Total Tons (millions)	18.2	17.9	18.9	18.8	15.6/16.1	14.9
--Tons on U.K.-flag Vessels (millions)	8.9	8.6	7.0	8.1	6.7/6.9	7.1
--U.K.-flag Share of Total (%)	49	48	37	43	43/43	48

[a] In 1974, the commodity groupings were revised. The figures are shown for both the earlier series and for the 1975 basis

Exhibit III-17

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY
FLEET OPERATIONS

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: United Kingdom

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
		Fleet Size Registered, Fleet Growth[b]						
Total Ships[a]	- Number	1,772	1,713	1,627	1,596	1,609	1,576	-2.3
	DWT	37,065	40,673	43,495	47,783	52,980	54,913	8.2
	GRT	24,070	25,754	27,214	29,405	32,153	33,229	6.7
Tankers	- Number	434	451	437	442	467	459	1.1
	DWT	20,863	24,065	24,447	26,924	31,494	32,869	9.5
	GRT	11,873	13,511	13,643	14,943	17,403	18,252	9.0
Bulk Carriers	- Number	296	306	326	330	332	343	3.0
	DWT	6,603	7,744	10,787	12,938	13,729	14,508	17.1
	GRT	4,167	4,821	6,507	7,667	8,098	8,510	15.4
Freighters	- Number	967	896	819	788	778	746	-5.1
	DWT	8,955	8,362	7,895	7,651	7,509	7,322	-3.9
	GRT	6,888	6,462	6,272	6,145	6,051	5,922	-3.0
		Deliveries to the Fleet[c] (where intended registry is known)						
Total Ships[a]	- Number	92	111	132	120	74	68	-5.9
	DWT	4,993	5,027	5,213	6,366	6,634	4,991	0.0
	GRT	2,819	2,899	3,335	3,737	3,678	2,953	0.9
Tankers	- Number	28	28	24	35	32	33	3.3
	DWT	3,665	3,213	1,175	3,313	5,001	3,879	1.1
	GRT	1,904	1,680	683	1,842	2,715	2,279	3.7
Bulk Carriers	- Number	24	29	45	38	21	23	-0.8
	DWT	909	1,319	3,213	2,481	1,494	999	1.9
	GRT	554	784	1,828	1,409	822	570	0.6
Freighters	- Number	39	53	61	47	21	11	-22.4
	DWT	351	493	821	572	189	111	-20.6
	GRT	415	421	793	486	141	86	-27.0
		Vessels on Order at Year-End[c] (where intended registry is known)						
Total Ships[a]	- Number	336	296	203	198	194	186	-11.2
	DWT	19,021	17,680	16,755	18,660	14,461	11,825	-9.1
	GRT					8,705	6,836	NA
Tankers	- Number	90	85	90	107	91	78	-2.8
	DWT	9,989	8,942	12,097	15,141	11,320	9,309	3.4
	GRT					6,657	5,177	NA
Bulk Carriers	- Number	106	96	54	46	55	44	-16.1
	DWT	7,295	7,239	3,945	3,023	2,553	1,717	-25.1
	GRT					1,611	1,113	NA
Freighters	- Number	140	115	59	45	46	63	-14.8
	DWT	1,737	1,499	713	496	387	794	-14.5
	GRT					397	526	NA

Exhibit III-17

Fleet Operations (continued)

Country: United Kingdom

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
	Share of National Trade (percent)[f]						
Imports	31	32	31	30	29	31	0.0
Exports	47	44	40	43	44	46	-0.4
	Reported Financial Results (millions of dollars)						
Revenues[d]	NA	3,299	3,199	4,044	4,955	NA	NA
Profits							
Outstanding Debt							
	Employment[e]						
Nationals	NA	NA	NA	NA	NA	NA	NA
Total	NA	NA	NA	NA	82,721	88,986	NA

[a] Includes Combination Passenger/Cargo vessels not shown separately.

[b] Source: Merchant Fleets of the World, Maritime Administration, U.S. Dept. of Commerce, semi-annual.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Includes revenues from non-U.K. registered vessels.

[e] Source: Maritime Transport, Organization for Economic Co9peration and Development, annual.

[f] Source: Exhibit III-16.

The U.K. owned and registered fleet continued to make a large positive contribution to the U.K.'s balance of payments in 1974 and 1975 in the amounts of $1.43 billion per year and had gross revenues of $3.6 billion in 1975. This strong performance is attributable mainly to the size, efficiency, and low average age of the fleet which permitted the U.K. fleet to compete in cross-trades and participate fully in the rapid expansion of trade to the Middle East.

The government aid programs for the U.K. fleet thus appear to have worked well during the past two years of difficult times in the shipping industry. The declining value of the British pound against other currencies undoubtedly also helped the competitiveness of the U.K. merchant marine in the world shipping.

Tankers were the most seriously affected sector of the U.K. fleet in the past two years. As of November 1975, 4,000 U.K. seamen had been laid off out of 88,000 employed in the merchant marine. Most of these layoffs were due to lay-ups of tankers. In late 1975, British Petroleum announced disposal plans for 24 vessels by November 1977 which would displace 830 officers.

Another recent problem for the U.K. fleet has been the threat of takeovers of publicly held companies by foreign interests due to the declining value of the pound. By mid-1975, Vlasov-Capitalfin, Hilmar Reksten, and Canadian, Panamanian, and Arab interests had taken control of or purchased substantial holdings in several U.K. shipping companies.

Beyond the maintenance of the guarantee program and the depreciation allowances, no special programs are expected to be developed to further support the United Kingdom national fleet.

C. AIDS TO THE BRITISH SHIPBUILDING INDUSTRY

1. Aid Programs

The government policy toward U.K. shipyards has been one of encouraging them to compete for orders from both domestic and foreign owners in the world shipbuilding market. Protectionist measures have not been employed by the U.K. government to aid the domestic shipbuilding industry. Although a large percentage of U.K. yard output has entered the national fleet, the government support for the yards has been directed toward exports. Aids provided for the yards have been primarily direct aids including:

- *Subsidized loans to permit the yards to offer supplier credits competitive with those of foreign yards,*
- *Direct grants of percentage construction subsidies,*
- *Subsidized loans for capital improvement projects, and*
- *Direct government rescues by acquiring ownership of yards experiencing financial difficulties.*

Some indirect aids are also employed but have tended to be small compared to the direct aids. The indirect aids have included:

- *Tax relief from indirect taxes,*
- *Free depreciation schedule on certain capital investments by yards, and*
- *Exemption from import duty on certain shipbuilding materials.*

Exhibit III-18 summarizes the principal assistance programs to the British shipbuilding industry between 1970 and 1975.

Exhibit III-18

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE BRITISH SHIPBUILDING INDUSTRY

1970-1975

i. Investment Financing Assistance

  Program 1 - Low Interest Loans

ii. Credit Assistance

  Program 2 - Export Credit Guarantee Department

iii. Tax Allowance Programs

  Program 3 - Indirect Tax Relief

iv. Direct Subsidies

  Program 4 - Construction Subsidy Grants

v. Preference Programs

vi. Government Ownership

  Program 5 - Government Ownership

vii. Other

  Program 6 - Research and Development Assistance

The aids provided over the study period have been recently overshadowed by the passage of the Shipbuilding Nationalization Bill, under which a nationalized British Shipbuilding Corporation, formed out of 39 existing yards, will be created.

The remainder of this section discusses each of the principal aid programs to the British shipbuilding industry in effect between 1971 and 1975. Section C.2. addresses the effectiveness of those programs and Section C.3. summarizes recent and prospective programs.

a. Principal Aids to the British Shipbuilding Industry

(i) Financing Assistance

Program 1 - Low Interest Loans and Grants

Low interest loans to yards have been made available for improving and expanding their facilities and for financing the supplier credits that yards offer on export orders. The Shipbuilding Industry Board provided loans and interest relief grants totaling $50 million between 1968 and 1971. Under the Industry Act of 1972, yards in development areas were eligible for low interest loans to upgrade or expand their facilities so that employment at these facilities might be made more secure. The first loan under these provisions was made to Sunderland Shipbuilders in late 1973, and since the $21 million loan was interest-free for the first two years, Sunderland benefited by over $2 million per year in 1974 and 1975.

Exhibit III-19 summarizes the loans and grants made to U.K. shipyards for improving their facilities under the Shipbuilding Industry Act of 1967 and under the Industry Act of 1972.

Over and above the government equity purchases of $67.8 million, the assistance to the shipbuilding industry in the form of grants and loans totaled $344.0 million over the period 1965-1976. Of this assistance, $240.3 million was in loans and $103.7 million in direct grants. Most of the funds were made available during the study period.

Exhibit III-19

GOVERNMENT EQUITY, GRANTS, AND LOANS UNDER THE SHIPBUILDING INDUSTRY ACT OF 1967 AND THE INDUSTRY ACT OF 1972

1965 - June 1976

(millions of dollars)

	Equity	Grants	Loans	Subtotal	Unexpended	Total
Private Companies	-	14.1	37.5	51.6	-	51.6
Partly or Wholly Owned [1]	59.9	38.4	103.0	201.4	46.4	247.8
Harland and Wolff [2]	7.9	51.2	99.8	158.9	51.6	210.5
Total	67.8	103.7	240.3	411.9	98.0	509.9

NOTE: Partly or wholly owned shipyards included:

Company:	Shares Owned:
[1] Cammell Laird	50% Government
Govan Shipbuilders	100% Government
Appledore Shipbuilders	Government
Sunderland Shipbuilders	Government
North East Coast Shiprepairers	Government
[2] Harland & Wolff	47.6% Northern Ireland Government

Source: Shipbuilders and Repairers National Association, June 1976.

Using a 2 percent interest rate differential as a conservative estimate of the benefit of the loans to the troubled shipbuilding firms, the benefits from the government loans can be estimated at $6.2 million per year. Grants averaging $17.3 million per year over the six years 1970-1975 brought the government benefits to the yards to approximately $23.5 million per year plus interest grace periods on loans to financially strapped shipyards such as Sunderland.

(ii) Credit Assistance

Program 2 - Export Credit Gurantee Department

Export credits financed by the clearing banks and guaranteed by the government's Export Credit Guarantee Department are intended to allow U.K. yards to offer financing terms on export orders competitive with terms offered by foreign yards. Exhibit III-20 presents the performance of U.K. shipbuilders 1969-1975.

The interest rates that these loans carry is determined by the government. As with the loans to U.K. shipowners under the Home Credit Scheme described earlier, the clearing banks are responsible for granting these loans. Any amount of financing that the clearing banks provide over a certain level earns them entitlements to refinance the excess amount with the government's Export Credit Guarantee Department.

The government-subsidized loans for export credits do not seem to have been effective in helping U.K. yards maintain or improve their share of world shipbuilding orders.

Exhibit III-20

PERFORMANCE OF U.K. SHIPBUILDING INDUSTRY
1969-1975

	1969	1970	1971	1972	1973	1974	1975
Orders Placed in U.K.							
--GRT (millions)	2.19	2.01	1.23	0.76	4.12	0.45	0.08
--Percent of World	7.3%	4.9%	4.0%	2.3%	5.6%	1.6%	0.6%
Deliveries of U.K. yards for Export							
--GRT (millions)	0.38	0.26	0.35	0.38	0.35	0.20	0.43
Deliveries of World Shipbuilding Industry							
--GRT (millions)	18.7	21.0	24.4	26.7	30.4	33.5	34.2
U.K. Exports - Percent of World Deliveries	2.0%	1.2%	1.4%	2.5%	1.2%	0.6%	1.3%

Source: Lloyds' Register of Shipping, Annual Report 1975 (1971-1974).

Although the prices, delivery times, and other elements of newbuilding contracts influence the overall performance of the U.K. yards, it can be inferred from Exhibit III-20 that the export credits offered by the U.K. yards either were not competitive with the terms offered by foreign yards or were not sufficient to overcome disadvantages that U.K. yards may have had with respect to the other contract elements mentioned above.

The U.K.'s share of new orders declined steadily from 1969 to 1975 with the exception of the boom year 1973 when total gross tonnage ordered in the world jumped to 73.6 million following 1972's 30.4 million and 1971's 29.6 million. Export deliveries exhibited an irregular pattern.

Exhibit III-21 summarizes the estimated value of U.K. shipbuilding exports over the period 1970 to 1975 and the discounted value of the ECGD credit, assuming a 2 percent advantage in interest rates on 80 percent financing.

(iii) Tax Allowances

Program 3 - Indirect Tax Relief

Two percent of the value of ships delivered by the U.K. shipbuilding industry can be taken as a tax exemption. This program is aimed at providing relief to shipbuilders from 2 percent Value Added Taxes incurred by the industry and suppliers. Based on the total value of ships delivered by year, the following amounts of benefit are estimated for the study period (see Exhibit III-22). The program was cancelled in January 1977.

Exhibit III-21

ESTIMATED VALUE OF ECGD CREDIT
1970-1975
(millions of dollars)

	Estimated Value of U.K. Merchant Ship Exports	Estimated Value of ECGD Guarantee[a]
1970	62.0	3.9
1971	81.0	5.2
1972	117.0	7.5
1973	122.0	7.8
1974	58.0	3.7
1975	146.0	9.4

[a] Based on value of ship exports.

Source: Shipbuilders and Repairers National Association

Exhibit III-22

Indirect Tax Relief
(millions of dollars)

Year	Amount[a]
1970	7.6
1971	8.5
1972	8.8
1973	9.7
1974	10.8
1975	10.6

[a] Based on 2 percent of the value of ships delivered by the U.K. shipbuilding industry.

Source: Exhibit III-21.

(iv) Direct Subsidies

Program 4 - Construction Subsidy Grants

Construction subsidy grants, administered by the Department of Trade and Industry were established under the Industry Act of 1972 and have been reduced from the original 10 percent of the contract price of vessels in 1972 to 4 percent in 1973 and 3 percent in 1974. These subsidies expired at the end of 1974 in line with the OECD agreement to eliminate direct construction subsidies.

The following exhibit summarizes the amounts paid to U.K. shipyards under the construction subsidy grants during the 1972-1975 period. The reported amounts represent payments in the year made, not commitments in the years in which the vessels or mobile offshore installations were contracted. Also, payments include payments on account for vessels under construction as well as payments on vessels delivered during the financial year.

The amounts reported in Exhibit III-23 for financial years 1972/1973 and subsequent years are payments under the Construction Grant Scheme for Shipbuilding of the Industry Act of 1972.

As can be observed from Exhibit III-23, the subsidies paid were distributed approximately in proportion to the domestic and export production of the industry. Approximately 63 percent were granted on ships for U.K. owners and 37 percent on ships for foreign owners.

(v) Preference Programs

There have been no preferences established which direct national fleet construction orders to the U.K. shipbuilding industry.

Exhibit III-23

CONSTRUCTION SUBSIDIES PAID TO U.K. SHIPYARDS

Financial Years 1972/1973 - 1975/1976

(April 1 - March 31)

	1972/73	1973/74	1974/75	1975/76
For U.K. Owners				
--Applications	109	188	175	113
--Amounts Paid ($ millions[1])	18.5	24.9	17.4	6.4
For Foreign Owners				
--Applications	36	64	89	50
--Amounts Paid ($ millions[1])	9.7	16.6	11.3	2.2
Total[2]				
--Applications	145	252	264	163
--Amounts Paid ($ millions[1])	28.1	41.6	28.7	8.5

[1] At the exchange rate prevailing on January 1 during each financial year.

[2] Totals may not add due to rounding.

Source: Reports to Parliament, Industry Act of 1972.

(vi) Government Ownership

Program 5 - Government Ownership

The most notable trend in government aid to the U.K. shipbuilding industry is the increasing participation of government in the ownership of yards. Between 1970 and 1975, the government has acquired:

- *50 percent ownership in Cammell Laird Shipbuilders, Ltc.*
- *100 percent ownership of Govan Shipbuilding, Ltd., operator of three of the four yards formerly owned by Upper Clyde Shipbuilders (UCS). UCS went into liquidation in June 1971.*
- *47.6 percent ownership of Harland and Wolff, Ltd. in Northern Ireland.*
- *100 percent ownership of Scotstoun Marine, Ltd.*
- *100 percent of Appledore Shipbuilders, Ltd.*
- *100 percent of Sunderland Shipbuilders, Ltd.*
- *100 percent of North East Coast Shiprepairers, Ltd.*

The first three acquisitions above involved government commitments of over $160 million, and as shown in Exhibit III-19, by June 1976 total government equity purchases, grants, and loans to partly or wholly owned shipbuilding companies, including Harland and Wolff, totaled over $360 million. In view of the recent nationalization of 39 major U.K. yards, the distinctions between past equity participations, grants, and loans becomes less important in considering the magnitude of the aids. The Aircraft and Shipbuilding Industries Act 1977 is discussed more fully in the following section.

(vii) Other

Program 6 - Research and Development Assistance

The United Kingdom has supported approximately $2 million per year of research and development related to shipbuilding.

b. Benefits of Assistance Programs to the British Shipbuilding Industry

Exhibit III-24 summarizes the benefits of assistance programs to the industry. The assistance to the British shipbuilding industry has primarily been in the form of direct subsidies to make the prices for construction in the U.K. competitive, both for exports and for orders from U.K. owners. The subsidies were granted in proportion to the domestic/export production of the industry, but were eliminated in 1974 although payments continued on prior commitments.

The second largest source of benefits to the shipbuilding industry were the tax exemptions on the value of constructions. These aggregated $56 million over the period, but the program was cancelled in January 1977.

Through the Export Credit Guarantee Department the U.K. government also provides credit assistance to shipyards for competitive financing arrangements.

Despite the direct subsidies, credit assistance and the high proportion of orders for U.K. owners, the industry continued to experience significant difficulties over the study period requiring special government intervention through grants, loans, and equity purchases. As noted, ultimately, the industry is currently being nationalized.

2. Effectiveness of Assistance Programs to the British Shipbuilding Industry

Overall, the British shipbuilding industry's total output on a compensated ton basis declined, productivity stagnated and nationalization became inevitable over the period 1970 to 1975. Assistance in the form of construction subsidies and credit guarantees have been

Exhibit III-24

BENEFITS OF UNITED KINGDOM ASSISTANCE PROGRAMS TO THE BRITISH SHIPBUILDING INDUSTRY

1970-1975

(millions of dollars)

	1970	1971	1972	1973	1974	1975
Program 1:						
Low Interest Loans	23.5	23.5	23.5	23.5	23.5	23.5
Program 2:						
ECGD	3.9	5.2	7.5	7.8	3.7	9.4
Program 3:						
Indirect Tax Relief	7.6	8.5	8.8	9.7	10.8	10.6
Program 4:						
Construction Subsidy	28.1[a]	28.1[a]	28.1	41.6	28.7	8.5
Program 5:						
Government Ownership	b	b	b	b	b	b
Program 6:						
R&D Assistance	2.0	2.0	2.0	2.0	2.0	2.0
Subtotal	65.1	67.3	69.9	84.6	68.7	54.0

[a] Estimated at 1972 level.

[b] See Program 1.

aimed at maintaining the competitiveness of the industry. Assistance programs to the massive U.K. shipping industry translated into little indirect benefit to the shipbuilding sector, despite two-thirds of the shipbuilding output being for the U.K. fleet.

As a result, the industry exhibited only a 1.4 percent annual growth in GRT output over the period, as compared with 10.8 percent for Japan, 10.6 percent for Germany and 4.7 percent for Sweden. The gross tonnage of the U.K. fleet increased at an annual rate of 6.7 percent during the period.

Thus, with direct assistance and a high potential for indirect assistance from the growing national fleet, the problems of the U.K. shipbuilding industry have continued. Productivity and labor unrest caused delivery dates to slip as well as cost and despite high quality and a devaluing currency, prospective customers looked elsewhere. Government intervention in the form of special loans and grants were required to support segments of the industry during the study period.

The shipbuilding industry has provided employment for 60,000 workers out of a total work force of approximately 90,000. The location of this workforce in high unemployment areas, has been an important consideration leading to the nationalization of the industry.

3. Recent and Prospective Programs

The U.K. shipbuilding industry did not fare well in the recent declines of world shipbuilding. Even before the situation of tanker surplus arose, the U.K. government had to rescue some financially troubled yards. With the recession and increasingly strong competition in price and credit terms from foreign yards, the U.K. yards' orderbooks suffered.

In the summer of 1974, a plan to nationalize over 40 shipyards and related establishments by the beginning of 1976 was put forth as a means of aiding financially troubled yards and of maintaining employment in the industry. Many U.K. yards are located in areas of high unemployment and any cutbacks of the yards' labor force would be politically sensitive since the current Labor Party government sought support in its successful election bid with promises of nationalization for the shipyards. Government takeover was seen by many as a preferable alternative to the yards having to close. The shipyards employed 60,000 persons in 1975 out of a total shipyard labor force of about 90,000 with another 180,000 working in auxillary sectors of the economy. Additional unemployment among shipbuilders was expected to reach 10,000 by the end of 1976. Exhibit III-25 reviews U.K. shipyard performance during the study period.

The nationalization scheme produced much heated discussion in Parliament and the implementation schedule slipped to the fall of 1976 and was finally realized in July 1977.

In another move to generate export orders for U.K. yards, the U.K. government also approved a cost escalation insurance program that covers up to 18 percent inflation in the cost of export contracts[3], thus permitting the yards to offer fixed-price contracts.

To improve the competitiveness of U.K. yards for attracting orders from U.K. owners, the government intended to extend the cost escalation insurance program to include domestic as well as foreign orders. By having the government absorb the inflation risk on contracts, the yards gain a benefit equivalent to a construction subsidy in the amount of the inflation experienced during the life of the contract, subject to the 18 percent maximum.

Also, in connection with the nationalization scheme, the government proposed to guarantee to customers placing orders in U.K. yards to be nationalized that progress payments would be refunded should the yard collapse before nationalization. After nationalization, the contract was to be honored by the nationalized yard.

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[3] *10 percent escalation is included in the contract; from 10-18 percent is covered by the government guarantee; anything over 18 percent is the responsibility of the yard.*

Exhibit III-25

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY

SHIPBUILDING

Oceangoing Vessels of 1,000 Gross Tons and Over

(DWT and GRT in Thousands)

Country: United Kingdom

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
		Deliveries[c]						
Total Ships[b]	- Number	71	65	61	59	40	45	-8.7
	DWT	1,881	2,087	1,849	1,639	2,145	2,265	3.8
	GRT	1,178	1,246	1,070	1,025	1,210	1,260	1.4
Tankers	- Number	15	13	11	11	7	13	-2.8
	DWT	736	892	675	407	1,085	1,116	8.7
	GRT	391	480	354	224	566	598	8.9
Bulk Carriers	- Number	26	16	15	15	10	16	-9.3
	DWT	765	739	804	767	730	915	3.6
	GRT	481	431	464	451	406	499	0.7
Freighters	- Number	29	36	35	32	22	16	-11.2
	DWT	376	456	370	459	328	240	-8.6
	GRT	296	335	252	326	224	163	-11.2
		Orders During Year[d]						
Total Ships[b]	- Number		35	11	103	58	28	-5.4[a]
	DWT		2,301	617	5,453	1,749	2,687	4.0[a]
	GRT							NA
Tankers	- Number		7	4	33	13	21	31.6[a]
	DWT		1,515	272	3,730	679	2,504	13.4[a]
	GRT							NA
Bulk Carriers	- Number		11	4	26	21	3	-27.7[a]
	DWT		2,033	241	1,070	727	100	-52.9[a]
	GRT							NA
Freighters	- Number		17	3	43	23	4	-30.4[a]
	DWT		161	104	647	341	90	-13.5[a]
	GRT							NA
		Cancellations During Year[e]						
Total Ships[b]	- Number	6	7	12	3	4	5	-3.6
	DWT	501	296	227	219	400	1,253	20.1
	GRT							NA
Tankers	- Number	5	0	0	0	4	5	0.0
	DWT	351	0	0	0	400	1,253	29.0
	GRT							NA
Bulk Carriers	- Number	1	4	4	3	0	0	-100.0
	DWT	150	216	108	219	0	0	-100.0
	GRT							NA
Freighters	- Number	0	3	8	0	0	0	NA
	DWT	0	80	119	0	0	0	NA
	GRT							NA

Exhibit III-25

Shipbuilding (continued)

Country: United Kingdom

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
		Orders Outstanding at Year-End[c]						
Total Ships[b]	- Number	195	158	96	137	151	129	-7.9
	DWT	7,894	7,812	6,353	9,948	9,152	8,321	1.1
	GRT					5,845	5,031	NA
Tankers	- Number	36	30	23	45	47	50	6.8
	DWT	3,057	3,680	3,277	6,600	5,794	5,929	14.2
	GRT					3,642	3,457	NA
Bulk Carriers	- Number	55	46	31	39	50	37	-7.6
	DWT	3,454	3,124	2,453	2,537	2,534	1,719	-13.0
	GRT					1,670	1,148	NA
Freighters	- Number	104	82	42	53	54	42	-16.6
	DWT	1,383	1,008	623	811	824	674	-13.4
	GRT					534	427	NA
		Reported Financial Results (millions of dollars)						
Revenues[f]		380.1	426.6	440.3	485.0	504.0	531.5	6.9
Profits		NA						
Outstanding Debt		NA						
		Employment						
Employees (000) at Year-End		98,833	97,129	94,788	92,774	91,048	90,881	-1.7

[a] 4-year annual growth rate, 1971-1975.

[b] Includes Combination Passenger/Cargo Vessels not shown separately.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Source: Derived from orders outstanding, deliveries, and cancellations. Approximate due to timing differences in sources.

[e] Source: Fairplay International Shipping Weekly, World Ships on Order, quarterly.

[f] Value of ships completed including naval vessels.

In addition to the measures discussed above, the government has also appealed to U.K. owners to place more orders in domestic yards and has exerted some pressure on the owners by publicly discussing the possibility of requiring them to place their orders in U.K. yards. Owners have traditionally resisted any home-purchase requirement arguing that they should not have to absorb inefficiency penalties on account of uncompetitive ship prices from U.K. yards. Talk of "buy British" requirements has raised the possibility that U.K. owners might flee to convenience flags rather than accept cost inefficiencies due to a protectionist shipbuilding policy.

Other measures to secure orders for the yards have been considered by the government including accelerating military shipbuilding for the Royal Navy, having yards build ships for their own accounts or for the government's account to be chartered out or stockpiled until the market for vessels improves, and offering cheaper credit for operators ordering in U.K. yards. Options such as building and stockpiling ships are considered measures of last resort, however, since they would artifically increase the tonnage on an already overtonnaged market.

A grant program to cover orders over an 18-month period was also established. An initial funding of $111.8 million was established, with the first half expected to be expended over the first half of 1977, prior to the then expected startup of the nationalized industry at mid-year. The funding would offset slightly under 10 percent of the prices of British construction. Combined with devaluation effects, the funds were expected to reduce the overall price levels by approximately 15 percent.

In March 1977, after the ship repair industry was dropped from the rationalization scheme, the plan was voted through Parliament. The companies to be vested into the British Shipbuilding Corporation are shown in Exhibit III-26. Actual vesting took place on July 1, 1977.

Exhibit III-26

NATIONALIZED SHIPBUILDING INDUSTRY COMPANIES WHICH FORMED BRITISH SHIPBUILDERS

July 1, 1977

Shipbuilding Companies

Appledore Shipbuilders Limited
Austin & Pickersgill Ltd.
Brooke Marine Limited
Cammell Laird Shipbuilders Limited
Clelands Shipbuilding Company, Ltd.
Ferguson Brothers (Port Glasgow) Limited
The Goole Shipbuilding & Repairing Co., Ltd.
Govan Shipbuilders Limited
Hall Russell & Company, Ltd.
Lithgows Limited
Robb Caledon Shipbuilders Limited
Scott and Sons (Bowling) Limited
Scotts' Shipbuilding Company Limited
Smith's Dock Company, Ltd.
Sunderland Shipbuilders Limited
Swan Hunter Shipbuilders Limited
Vickers Shipbuilding Group Limited
Vosper Thornycroft Limited
Yarrow (Shipbuilders) Limited

Companies Manufacturing Slow Speed Diesel Marine Engines

Barclay, Curle & Company Limited
George Clark & NEM Limited
Hawthorn Leslie (Engineers) Ltd.
John G. Kincaid & Company Limited
Scotts' Engineering Company Limited

Training Companies

The Scott Lithgow Training Centre Limited
Swan Hunter Training and Safety Company Limited
Yarrow (Training) Limited

Source: Aircraft and Shipbuilding Industry Act 1977, Chapter 3, 1975.

The purchases of equity from the current private owners were scheduled to take place by July 1, 1977 under a formula based on 1974 share prices. Approximately $258 million was expected to be required without the shiprepair industry with the equity being swapped for treasury stock.

Required capital investments of $344 million have been estimated. Under the nationalization bill the British Shipbuilding Corporation can borrow, with Treasury consent, up to $516 million.

Thus, with the prior injecture of approximately $412 million, the current commitments can bring government funding up to a level of well over $1.2 billion, not counting the special intervention fund of $111 million and any amounts for the inflation guarantees.

Led by a triad of management representing government, labor and industry, British Shipbuilders Corporation (BSC) plans to employ the economies and efficiencies of centralized marketing, finances, controls and administration. BSC seeks efficiency through utilization of the best U.K. yards to win orders in the interim, with or without subsidies and to develop a range of good ship types for future economies. BSC maintains that the U.K. can be competitive with Japanese bids for 12,000 dwt dry cargo vessels. BSC will seek to structure its shipyards in a decentralized manner so that the performance of individual shipyards may be measured.

Questions have been raised concerning the closure of shipyards and the prospect of sharing the hard-won orders of one yard with other yards. BSC has stated that orders would be pooled only when customer delivery requirements for multi-ship procurements were in a time frame where pooling would facilitate securing the order. The extent of impending closures of selected U.K. shipbuilders remains to be seen, as does the resolution of certain prospective shiporders of formerly distinct shipyards.

IV. THE MARITIME AIDS OF NORWAY

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IV. THE MARITIME AIDS OF NORWAY

A. SUMMARY

1. Background

The Norwegian national fleet at the end of 1975 included 8.6 percent of the world's total deadweight tonnage and ranked fourth after Liberia, Japan, and the United Kingdom, In 1968, Norway had ranked second in the world after Liberia. Despite significant growth in the Norwegian fleet, the Norwegian share of the world's fleet has declined steadily over the past 10 years. The Norwegian fleet is on average considerably more modern than the average of the world's fleet, but the average age of the fleet has not improved over the past five years (Exhibit IV-1).

As an industry, the national fleet is significantly larger than the Norwegian shipbuilding industry. Over the past five years, deliveries to the Norwegian fleet were three to four times the total output of the Norwegian shipbuilding industry (Exhibit IV-2). Whereas, about three quarters of the national shipyard output has gone to the Norwegian fleet, those deliveries represented less than 25 percent of the total deliveries to the national fleet. In 1975 the Norwegian fleet employed 30,800 persons and earned Norway $774 million as compared to the $481 million in foreign exchange earned by Norway's 33,400 shipyard workers through ship exports. Norwegian's shipping's $3,174 million in gross receipts in 1975 was equal to some 11 percent of Norway's $28,321 million GNP.

The principal aids to the Norwegian national fleet have taken the form of tax allowances, which shelter income and include incentives for reinvestment. The aids provide for the creation of capital in a country with limited capital markets. However, since the principal sources of capital for shipowners are from the depreciation of new assets and the reinvestment

Exhibit IV-1

SHARE OF WORLD FLEET AND AVERAGE AGE
1966-1975

	1966	1968	1970	1972	1974	1975
--------Vessels Registered Under Norwegian Flag-------- Percent of World Fleet						
Total Fleet[1]	7.4	6.8	5.9	5.7	4.6	4.3
Tankers	12.5	10.6	8.6	8.2	6.6	6.3
Bulk Carriers	12.2	12.9	11.5	10.2	7.9	7.4
Freighters	5.3	4.4	3.7	3.5	2.7	2.5
--------Deadweight Tonnage Registered Under Norwegian Flag-------- Percent of World Fleet						
Total Fleet[1]	10.9	11.2	9.9	9.6	8.6	8.6
Tankers	15.2	14.1	11.3	10.5	9.4	9.4
Bulk Carriers	15.0	16.7	15.1	12.6	11.5	11.1
Freighters	5.2	4.4	3.6	3.6	2.8	2.5
--------Norwegian Fleet - Average Age of Vessels-------- (years)						
Total Fleet[1]	10	8	8	8	8	8
Tankers	8	7	7	8	7	7
Bulk Carriers	6	5	5	6	6	7
Freighters	12	11	11	11	11	11
--------World Fleet - Average Age of Vessels-------- (years)						
Total Fleet[1]	17	13	13	12	12	12
Tankers	11	11	11	11	11	11
Bulk Carriers	11	9	8	8	9	9
Freighters	16	15	13	13	13	13

[1] Includes Combination Passenger/Cargo not shown separately.

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce, annual.

Exhibit IV-2

SUMMARY OF NATIONAL FLAG FLEET AND SHIPBUILDING ACTIVITY
1970-1975

NORWAY

	1970	1971	1972	1973	1974	1975
Total Deliveries - Norwegian Shipyards						
Vessels	33	54	58	41	44	42
DWT (000)	1,152	1,474	1,401	1,898	1,568	1,775
GRT (000)	642	845	791	1,091	916	1,034
Deliveries for Nowegian Registry from Norwegian Shipyards						
Vessels	18	25	25	23	20	21
DWT (000)	782	1,111	1,048	1,527	1,164	1,047
GRT (000)	426	600	552	808	616	554
Deliveries for Norwegian Registry from World Shipyards						
Vessels	58	84	77	78	59	75
DWT (000)	3,876	4,108	4,062	6,385	5,182	6,869
GRT (000)	2,151	2,312	2,265	3,466	2,818	3,666
Norwegian Owners Share of Norwegian Shipyard Deliveries (Percent)						
Vessels	55	46	43	56	45	50
DWT (000)	68	75	75	80	74	59
GRT (000)	66	71	70	74	67	54
Norwegian Shipyards Share of Deliveries to Norwegian Owners (Percent)						
Vessels	31	29	32	29	34	28
DWT (000)	20	27	26	24	22	15
GRT (000)	20	26	24	23	22	15

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce, semi-annual.

of gains from the sale of older assets, the net growth of the fleet has been limited by incentives for the replacement of older tonnage as shown in Exhibit IV-3.

Increasing wage costs have also hindered the ability of the Norwegian fleet to expand rapidly. Orders for the modern vessels required to increase the Norwegian fleet's competitiveness were stimulated by the aid programs, but the high costs of manning rendered existing small Norwegian vessels uncompetitive. While deadweight and gross registered tonnage increased, the number of vessels decreased, reducing the number of berths for Norwegian seamen. (Exhibit IV-4)

One of the aids to the national fleet is a reduced level of income taxes for seamen as well as government underwriting of seamens' travel. This aid appears to have been offset, however, by increases in wage levels, likely demanded by the unions as the number of available jobs aboard Norwegian vessels has decreased so that no net gain was realized by Norwegian owners.

Water transport accounted for 8.4 percent of Norway's GNP in 1974. Until the expansion of the offshore oil industry, shipping was the keystone to Norway's balance of payments situation. In 1974, Norway incurred a current deficit of $630[1] million, but net ship transactions made a positive contribution of $214 million and net freight earnings contributed $2.15 billion. Shipping sector loans made a negative contribution of $199 million to long-term capital transactions.

The foreign currency account (excess of foreign currency income over foreign currency expenditures) of the Norwegian national fleet during the 1970-1975 period

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[1] *Dollar figures in this chapter have been converted at the 1975 exchange rate of 5.2269 Norwegian kroner to the dollar.*

Exhibit IV-3

COMPARISON OF FLEET GROWTH - NORWAY AND WORLD

1970-1975

(deadweight tons in millions)

GROWTH IN REGISTERED FLEET

	Norway			World		
	Deadweight Tons		Percent Change	Deadweight Tons		Percent Change
	1970	1975		1970	1975	
Total Fleet	32.4	47.8	48%	327.0	556.6	70.2
Tankers	17.4	28.5	64	153.1	302.2	97.4
Bulk Carriers	11.6	16.7	44	77.2	150.1	94.5
Freighters	2.3	2.6	13	92.4	101.2	9.6

NEWBUILDING DELIVERIES TO THE FLEET

	Norway		World	
	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT
Total Fleet	26.6	82	254.8	78
Tankers	17.3	99	157.1	103
Bulk Carriers	8.6	74	73.5	95
Freighters	.7	30	24.0	26

SHARE OF NEWBUILDING DELIVERIES USED FOR NET FLEET GROWTH AND FOR VESSEL REPLACEMENT

	Norway		World	
	Percent for Net Fleet Growth	Percent for Vessel Replacement	Percent for Net Fleet Growth	Percent for Vessel Replacement
Total Fleet	57.9	42.1	90	10
Tankers	64.3	35.7	95	5
Bulk Carriers	58.7	41.3	99	1
Freighters	32.8	67.2	37	63

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

Exhibit IV-4

TRENDS IN SEAMEN'S WAGES, NUMBER OF VESSELS, AND NUMBER OF SEAMEN
(1970-1976)

	Adult Seamen Monthly Earnings		Number of Vessels		Number of Norwegian Seamen	
	(Dollars)	(% Change)	(Number)	(% Change)	(Number)	(% Change)
1970	NA		1,173		36,346	
1971	NA		1,199	2.2	34,533	(5.0)
1972	NA		1,118	(6.8)	34,478	(0.2)
1973	1,086		1,102	(1.4)	33,294	(3.4)
1974	1,213	11.7	1,028	(0.7)	32,339	(2.9)
1975	1,415	16.6	991	(3.6)	30,758	(4.9)
1976	1,612	14.0	NA	NA	NA	NA

Source: Exhibit IV-13 and Wage Statistics Ocean Transport, Central Bureau of Statistics, Oslo, March 1976.

has been between $774 and $1,784 million. New ship exports have added another $155 to $481 million each year (Exhibit IV-5). On average, shipping has contributed approximately $1.75 billion per year between 1970 and 1975 to the Norwegian current account.

2. Conclusions

The Norwegian national fleet has provided a continuous stream of positive contributions to the Norwegian balance of payments. Although less significant, the shipbuilding industry has provided an important source of employment, particularly in certain regions.

As a developed industrial nation with a small population, the maritime industries have been forced to compete for funds in capital markets that are unable to meet the needs of all sectors of industry. These markets were strained even further during the study period, as Norway commenced its costly development of offshore energy and sought domestic and foreign capital. To meet the demands of the Norwegian fleet, the government has provided a number of indirect tax allowances.

These allowances have permitted owners to reserve funds on a pre-tax basis for use in fleet expansion and also for use in severe downturns of world shipping when the high capital burdens of ship procurement require liquidity. Built up during normal and boom cycles through operations and the prudent disposal of vessels, these allowances have permitted the Norwegian tanker fleet to expand rapidly over the study period. The recent shipping recession has placed large liquidity pressures on the reserves of Norway's bulk operators and owners of drilling rigs. In response to the current situation, the Norwegian programs have been broadened to include financing assistance through the Norwegian Guarantee Institute.

Aids other than tax allowances have also been a part of Norway's maritime aids. The shipbuilding industry operated over the study period with relatively little

Exhibit IV-5

CURRENT ACCOUNTS OF THE SHIPPING SECTOR 1970-1975

(millions of dollars)

Year	Gross Receipts	Expenditures	Repairs	New Ships	Second Hand Sales	Interest	Net Foreign Current Account	New Ship Exports
1970	2,390	669	230	570	262	55	1,128	155
1971	2,677	747	343	721	153	85	934	203
1972	2,712	758	302	665	429	109	1,307	252
1973	3,196	913	321	1,126	727	138	1,425	264
1974	3,677	1,205	319	949	779	199	1,784	384
1975	3,174	1,167	345	1,259	564	192	774	481

Source:

assistance. The primary aid had been through the continuation of customs duty rebates and relatively small credit programs. Indirectly Norwegian shipyards benefit from the government aids extended to the Norwegian fleet for 72 percent of the yards' output in 1970 to 1975 was for Norwegian owners.

As the price differentials between Norwegian yards and Japanese and Korean yards increased between 1974 and 1976, the domestic demand for Norwegian-built vessels declined. In response, the government has created incentives to Norwegian owners for home construction. These have principally taken the form of expanded tax allowances, e.g., increased depreciation allowances, aimed at reducing price differentials.

Also significant is the opening of credit facilities permitting financial assistance to Norwegian owners, rather than only to export ship orders. These include both government-sponsored second mortgages and guarantees on loans.

With top level government and Norwegian Export Council support, special foreign aid grant programs using generous OECD "gift" financial terms have been developed. Designed to be non-competitive with Norwegian shipping interests, orders for a number of small and medium-sized vessels and orders for comprehensive fleet development including Norwegian expertise and experience have been secured using generous financial packages. The terms of such projects include 90 percent credit and 10 years to repay at 3.25 percent and amount to subsidies to shipyards for which Norwegian authorities have set aside nearly $96 million. When combined with some orders from Norwegian shipowners and Norway's expertise in building vessels for the expanding LNG and LPG markets, the shipbuilding industry should be able to manage an orderly reduction. Additional government assistance through special loans and funds for restructuring and retraining have also been provided to the yards to facilitate the shipbuilding industry's activities.

B. AIDS TO THE NORWEGIAN NATIONAL FLEET

1. Aid Programs

The principal objectives of the aids to Norwegian shipowners have been to encourage the replacement of older vessels and the retention of profits within the industry. The accelerated depreciation and the reinvestment incentives of certain reserve funds have also served to smooth the industry's cyclical income pattern by allowing the owners some discretionary tools to adjust the timing of their book profits. Indirect aids in the form of accelerated depreciation and tax-deferred reserve funds have been the major elements of the government's assistance for this purpose.

Norway has no direct operating subsidy or construction subsidy for the national-flag fleet with the exception of subsidies paid to certain combination passenger/cargo liner services in the coastal trade.

As shown in Exhibit IV-6, six principal aids were available to the Norwegian fleet over the 1970-1975 study period. A recent aid categorized under Investment Financing Assistance is the Guarantee Institute, which was established towards the end of the study period. Prior to that, the principal aids to Norwegian operators were tax allowances which assisted owners in managing the cash flow and capital reserves necessary to finance new investment. The reduced seaman's tax income tax rate provided limited assistance to owners in relieving the effect of high Scandinavian wage costs. Finally, a small financing guarantee program and direct operating subsidies were provided in the coastal trades. Each of these programs is discussed in detail in the following section. Section B.2. discusses the effectiveness of the assistance programs employed over the 1970-1975 period. Section B.3. addresses current and prospective programs.

Exhibit IV-6

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE NORWEGIAN NATIONAL FLEET

1970-1975

i. Investment Financing Assistance

  Program 1 - Guarantee Institute
  Program 2 - Guarantees for Coastal Vessels

ii. Credit Assistance

iii. Tax Allowance Programs

  Program 3 - Additional and Initial Depreciation
  Program 4 - Tax-Free Reserves
  Program 5 - Reduced Seaman's Tax

iv. Direct Subsidies

  Program 6 - Subsidies in Coastal Trades

v. Preference Programs

vi. Government Ownership

vii. Other

a. Principal Aids to the Norwegian National Fleet

(i) Investment Financing Assistance

The tax-related maritime aids of Norway have been designed to match the financial resources and needs of its financial markets and shipowners. The capital resources of Norway have been stressed to meet the needs of the Norwegian economy's requirement for investment capital and the policies of the Bank of Norway have reacted to these demands.

Norway's ratio of investments to the gross domestic product increased by 30 percent over the study period, driven by the need for capital to develop North Sea oil projects. This demand for capital necessitated the use of foreign capital and thus pressure on the Norwegian kroner developed. The Bank of Norway was forced to tighten credit policy, which made the raising of capital more difficult for shipowners.

Norwegian shipowners share the burden of capital formation with other Norwegian industries. Compared with their international counterparts, Norwegian banks are strictly controlled by the government and are small. The largest commercial bank in Norway ranks 250th in assets in the world. At the end of 1974, approximately 55 percent of total private and municipal investment in Norway was financed by internally generated funds, 18 percent by foreign credit sources, and 27 percent by domestic credit sources. Some 40 percent of the domestic credit financing uses foreign capital. The domestic credit sources in toto were financed 12 percent by commercial and savings banks, 10 percent by state banks and only 5 percent by the bond market.

The financial requirements necessary to support the worlds 4th largest fleet have therefore required substantial investments by the shipping sector and are mainly financed out of current and past profits and out of the proceeds of exports of used ships. Approximately 10 percent is financed by net borrowing, almost exclusively from foreign banks, due to the limited domestic availability of medium- and long-term credits. Although the foreign indebtedness of Norway is very large in relation to the size of its gross domestic product, the large current account deficits are not expected to be a source of concern to Norwegian monetary authorities, in view of the abundance of the expected oil revenues that will last well into the next century.

Norwegian banks have played an important role in the recent government initiative to help owners of oil rigs and ships through the present slump by providing the Norwegian state-backed Guarantee Institute for Ships and Drilling Rigs long-term loans with variable maturities. Most of the Norwegian subscription to the 40 percent non-government shares in the syndicate was by already heavy investors in Norwegian shipping interests, while some foreign financial institutions also joined the syndicate.

Program 1 - Guarantee Institute

Prior to 1975, Norway provided no financing assistance to the offshore fleet. Aids to the national fleet had almost exclusively taken the form of tax allowance programs; the principal programs over the 1970-1975 period being depreciation allowances, tax free reserves and seaman's income tax allowances.

These aids provided assistance to Norwegian owners in the areas of reinvestment and stability of earnings. The recent tanker overcapacity situation, however, proved too difficult for Norwegian owners, who unlike the more diversified Japanese and Swedish operators, and Norwegian owners of non-tanker tonnage, had been encouraged to heavily invest in the tanker sector by the various tax deferment and depreciation programs.

As a result, the Norwegian government was required to implement a new program in 1975, aimed at providing additional interim support for the large investments made by certain operators of tanker tonnage.

The Norwegian Guarantee Institute was created as a temporary measure to strengthen the possibilities for financing Norwegian ships and drilling rigs. Due to the timing of the initiation of this program, the Guarantee Institute will be more fully discussed under Recent and Prospective programs (Section IV-B.3).

Program 2 - Guarantees of Lower Priority Mortgages on Coastal Vessels

The Ministry of Transport may guarantee lower priority mortgages on coastal vessels. The guarantees are not restricted to vessels built in Norwegian yards and the total amount guaranteed under the program has risen from a ceiling of $9.6 million in 1973 to $28.7 million in 1976. The benefit of this program to Norwegian owners has been less than $1 million per year.

(ii) Credit Assistance

Credit assistance is not applicable to national flag operators.

(iii) Tax Allowance Programs

The Norwegian tax allowances programs include:

- *Depreciation allowances, which provide for accelerated depreciation of new assets to shelter taxable income.*
- *Several tax-free reserve funds which provide a range of benefits from the funding of recurring operational costs to the shelter of large cash flows from vessel sales for reinvestment*
- *A lower income tax rate for seamen.*

Program 3 - Depreciation Allowances

Additional and initial depreciation on ships is permitted above the normal straight line percentage of 5 to 8 percent per year[2]. This accelerated depreciation can be taken under either of the two options:

- *Additional depreciation at 1-1/2 times normal straight line rate for up to five years until a cumulative 15 percent over straight line is reached, or*
- *Initial depreciation up to 25 percent of the cost of a vessel (maximum of 5 percent per year) between the time of the first progress payment on construction and four years after delivery. This option has a maximum, however, of 50 percent of otherwise taxable income in each year. As a result of this latter requirement, the initial depreciation is utilized to a lesser extent than the additional depreciation, except in special cases.*

As discussed under tax-free reserves, the gains from the sale of vessels can be applied to new assets, reducing the total depreciation available, but not the basis for the accelerated depreciation schedules. When combined with the rapid depreciation schedules, an asset may be fully depreciated in only a few years. The full proceeds of the sale of that asset are then effectively the gain after only a short period.

Using the difference in cash flows between ordinary and additional/initial depreciation to quantify the benefit to Norwegian owners, the discounted flows of additional depreciation are equivalent to approximately

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[2] *Five to seven percent for liner vessels and six to eight percent for tankers and bulk carriers. Riskier vessels such as gas carriers are allowed up to 15 percent per year.*

4 percent of the cost of the vessel. The initial depreciation has a discounted value of approximately 8 percent of the vessel cost, without consideration of the use of the initial depreciation before delivery. Both of the above are based on a comparison with an estimated average normal depreciation of 6.5 percent per year and an 8 percent cost of capital.

Exhibit IV-7 summarizes the estimated value of additions and deletions to the Norwegian national fleet between 1972 and 1975. Based on an average discounted value of the additional and initial depreciation of 6 percent, the depreciation allowances on the net value of imports plus domestic deliveries ranges from $54.3 million in 1972 to $97.1 million in 1975. The gains on second hand ships reduces the amount of depreciation that may be taken, but not the basis for determining the amount of depreciation per year. As a result, the depreciation allowances have been estimated at the above levels. Were the depreciation basis affected, the value of the allowances would range from $28.6 million in 1972 to $63.2 million in 1975.

Program 4 - Tax Free Reserves

Norwegian operators have available several important reserve funds for sheltering taxable income, which include:

- *A fund for deposit of capital gains from the sale of ships where taxes can be deferred up to eight years and can be postponed further if gains are reinvested in new ships. Taxes are eventually recouped by the government because the total depreciation tax deduction of the new assets is reduced by the amount spent from the reserve fund increasing profits, but the book value of the new asset for future capital gains determination is unaffected. When combined with the depreciation allowances, vessels may be fully depreciated in only a few years.*

Exhibit IV-7

ESTIMATED VALUE OF ADDITIONS AND DELETIONS TO THE NORWEGIAN NATIONAL FLEET

1972-1975

(millions of dollars)

	1972	1973	1974	1975
Total Value of Norwegian Shipbuilding Output	492	598	715	840
Export Value of Norwegian Shipbuilding	252	264	384	481
Net Value to Norwegian Ship Owners	240	334	331	359
Value of Imports of New Ships	665	1,126	949	1,259
Net Value of Imports Plus Domestic Deliveries	905	1,460	1,280	1,618
Second-hand Sales	429	727	779	564
Net Increase in Undepreciated Value of Norwegian Fleet[a]	476	733	501	1,054

[a] Assumes write-off of gains against value of deliveries.

Source: Exhibit IV-5 and TBS estimates.

> *The timing of the tax liability thereby provides significant benefit to the Norwegian owners. With recurring investment and second hand sales, significant funds are made available for reinvestment and the tax liability is continuously moved into the future.*
>
> - *A fund for extraordinary repairs to vessels that are required as a result of periodic classification survey inspection.*
> - *A fund for owners to self-insure that portion of their hull risks not covered by commercial insurance. Deposits to the fund equal to equivalent insurance premiums for the risk covered are allowed.*
> - *Norwegian tax laws provide for a fund into which companies may deposit a maximum of 25 percent of earnings in any year. Amounts withdrawn from the fund receive favorable tax treatment if used to purchase new assets. Taxes are forgiven on 15 percent of amounts from this fund used to purchase new assets, and taxes on the remainder are deferred but not eliminated as the 85 percent must be used to reduce the depreciation basis of the new asset. The funds must be placed in blocked accounts for four years and reinvested in certain northern areas, however, and for this reason are minimally utilized by the shipping industry.*
> - *Foreign exchange reserves for freight contracts and for other payments subject to devaluation effects.*

Since the gain on the sale of ships does not reduce the depreciation basis, but does reduce the amount of depreciation that is taken, the benefits of the two programs are in part additive. That is, the value of the depreciation allowances is more than the discounted value of the depreciation on the net increase in undepreciated value.

The discounted value of the reserves for gains on ship sales is approximately 30 percent of value of the second-hand sales, assuming the shelter is eventually lost and taxes paid in the future. If the shelter is maintained, the value of the reserve is equal to the taxes or 50.8 percent of the sale value. Based on the 30 percent discounted value, ship sales yielded between $129 million and $234 million per year between 1972 and 1975, for the Norwegian fleet.

Exhibit IV-8 summarizes the three year results for a sample Norwegian ship owner. Over the three years the company placed an average of 76 percent of its earnings after ordinary depreciation into special depreciation and reserve accounts, not including the gain on the sale of a vessel.

Including the gain from the sale, the company was able to place 86 percent of its ordinary and extraordinary earnings after ordinary depreciation into special accounts. Taxes totaled 5 percent of the above earnings. The company applied these earnings to write off over 20 percent of its newbuilding contracts. Total accumulated depreciation declined from 65 percent of the initial value of the vessel to only 44 percent of the value of ships and newbuildings, even though that value had more than doubled in the two years. At the same time, other reserves were increased by over 50 percent.

The result of these tax-related reserves permitted Norwegian shipowners to pay little or no corporate income tax while expanding their fleets. The costs to the Norwegian government of this indefinite or infinite postponement of tax revenue can be estimated to be as low as the Norwegian bond rate, which represents the cost of funds available to the government. Norwegian bond rates have been low relative to European neighbors and have not been subjected to sharp fluctuations, averaging about 7 percent.

Exhibit IV-8

RESULTS FOR A SAMPLE NORWEGIAN SHIPOWNER
(millions of Norwegian Crowns)

	1973	1974	1975
---Income Statement Items---			
Results from Ship Operations	34.1	33.9	45.2
Profit Before Depreciation and Taxes	32.8	30.2	48.9
Gain on Ship Sales	--	45.5	--
Ordinary Depreciation	(16.2)	(18.2)	(12.3)
Advance Depreciation	(2.4)	(4.0)	(12.8)
Initial Depreciation	(3.5)	(2.7)	(4.6)
Newbuilding Fund	--	(45.5)	39.4
Depreciation from Newbuilding Fund	--	--	(39.4)
Devaluation Fund	(7.1)	1.2	2.2
Classification Fund	--	(2.3)	(6.4)
Self-Assurance Fund	(1.3)	(1.4)	(2.3)
Profits for Tax Purposes	2.3	2.8	6.2
Tax	(1.0)	(1.7)	3.1
---Balance Sheet Items---			
Newbuildings	--	196.8	284.1
Accumulated Depreciation	--	2.7	50.2
Ship Value	256.6	227.1	260.4
Accumulated Depreciation	166.9	159.6	181.2
Newbuilding Fund	--	45.5	6.1
Classification Fund	9.2	9.5	15.9
Self-Assurance Fund	2.6	3.6	5.9
Devaluation Fund	7.1	5.9	3.8

The resulting benefit from the more than $875 million in tax-free reserves afforded shipowners between 1971 and 1975 had a low cost to the government and was highly effective in promoting Norwegian modernization and tanker expansion.

Program 5 - Lower Income Tax Rate for Seamen

The state and local tax rates on income for seamen are up to 30 percent below the personal tax rates of other Norwegian citizens. The taxes of each group are progressive, but the ceilings for seamen are about 30 percent below that of non-seamen[3]. This translates into a potential benefit to Norwegian shipowners in that the salary that they have to pay to achieve any level of after-tax take home pay for seamen is less than it would be if the seamen had to pay full income tax rates.

Wage costs for the Norwegian fleet totaled $447 million in 1974, 14 percent of the total revenues for the fleet. Comparison of the wage and tax levels of seamen and Norwegian taxpayers excluding seamen in 1973 indicated that the average tax level for seamen was approximately 30 percent of total wages as compared to 35 percent for non-seamen. This difference in tax levels translates into $22.3 million on the 1974 wage levels.

It has been the government's intention to reduce the manning costs experienced by Norwegian shipowners so that the fleet might be more competitive, but the pay scales for Norwegian seamen have risen despite the tax differential. Thus, even with the benefit of lower taxes on seamen's wages, the daily manning costs of Norwegian-flag vessels are among the highest in the world. As shown in Exhibit IV-9, daily manning costs in the past three years for Norwegian vessels fall below those of Swedish vessels but are well above those vessels of British, Greek, or Liberian registry.

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[3] *For example, the progressive state tax ceiling is 33 percent for seamen versus 48 percent; the municipal tax ceiling is 16 percent versus 23 percent.*

(iv) Direct Subsidies

Program 6 - Subsidies for Coastal Trades

The state and municipal governments provide direct subsidies to a variety of coastal services. In 1974, these totaled $62 million and were divided by service area and level of government as shown in Exhibit IV-10.

These subsidies, while substantial, are primarily directed to local and ferry services which would be unprofitable without government support, but which are required by the regional economies as the principal means of transport. As shown in Exhibit IV-11, the budgeted levels of subsidy are expected to increase.

(v) Preference Programs

None

(vi) Government Ownership

None

(vii) Other

None

Exhibit IV-9

SUMMARY OF DAILY COSTS FOR VARIOUS TYPES OF VESSELS UNDER SELECTED FLAGS
1974-1976

	1974			1975			1976		
	Total Daily Costs	Daily Manning Costs	Manning Costs Share of Total Costs	Total Daily Costs	Daily Manning Costs	Manning Costs Share of Total Costs	Total Daily Costs	Daily Manning Costs	Manning Costs Share of Total Costs
Bulk Carrier Approx. 20000 DWT									
Sweden	$2790	$1580	57%	$3590	$2170	60%	$4170	$2500	60%
Norway	2670	1420	53%	3180	1670	53%	3520	1850	53%
United Kingdom	2130	1090	51%	2680	1390	52%	2890	1550	54%
Greece	1700	850	50%	2130	1030	48%	2320	1160	50%
Liberia	1770	850	48%	2130	1030	48%	2320	1160	50%
Liberia-nonITF*	1470	590	40%	1740	740	43%	1940	860	44%
Liner Vessels Approx. 15000 DWT									
Sweden	$2530	$1420	56%	$3420	$2100	61%	$3890	$2410	62%
Norway	2320	1420	61%	3060	1650	54%	3400	1810	53%
United Kingdom	2010	1020	51%	2390	1310	55%	2730	1460	53%
Greece	1560	780	50%	1960	930	47%	2130	1040	49%
Liberia	1610	760	47%	1960	930	47%	2130	1040	49%
Liberia-nonITF*	1350	520	39%	1550	670	43%	1760	760	43%
Tankers Approx. 250000 DWT									
Sweden	$7100	$2370	33%	$8130	$3130	38%	$8910	$3700	42%
Norway	6620	2130	32%	7890	2630	33%	8330	2920	35%
United Kingdom	5680	1300	23%	6450	1670	26%	7180	1850	26%
Greece	5200	990	19%	5980	1200	20%	6480	1270	20%
Liberia	5200	990	19%	5980	1200	20%	6480	1270	20%

*Pay below ITF minimum

Source: Bremen Institute of Maritime Economics, Shipping Statistics; November 1976

Exhibit IV-10

SUBSIDIES TO COASTAL TRADES 1974

(millions of dollars)

	Central Government	Local Government	Total
1. Total Services	59.7	2.3	62.0
2. Long-Distance Services	10.7	-	10.7
3. Local Services	20.8	0.1	20.9
4. Ferry Services	27.5	2.0	29.5
5. Rural Services	0.6	0.2	0.8
6. Inland Waterway Service	0.1	0.0	0.1

Source: Transport and Communication Statistics 1975, Central Bureau of Statistics, Oslo

Exhibit IV-11

BUDGETED SUBSIDIES FOR DOMESTIC WATER TRANSPORT

(millions of dollars)

Year	Coastal Subsidies
1974	61.2
1975	70.2
1976	72.7
1977	87.1

Source: National Budget of Norway 1976, 1977, Royal Norwegian Ministry of Finance.

b. Benefits of Norwegian Assistance Programs to the National Fleet

Exhibit IV-12 summarizes the benefits of the Norwegian assistance programs over the study period. Excluding the guarantee for coastal vessels (less than $1.0 million per year) and the coastal subsidies (about $40 million to $70 million per year) the benefits of the three principal tax related programs are estimated at between $200 million and $330 million per year.

2. Effectiveness of Aids to the Norwegian National Fleet

The previously described aids appear to have three basic purposes:

- *to encourage investment in new vessels so that the Norwegian fleet can compete successfully in world shipping. The high productivity vessels offset to some extent high manning costs incurred by using Norwegian crews,*
- *to remove some cyclicality risk from vessel ownership and thus encourage investment in the industry, and*
- *to ease the burden on owners of employing high-wage Norwegian crews and thus create employment opportunities for Norwegian nationals.*

The shield for taxable income provided by accelerated depreciation is smaller in Norway than that in countries such as the United Kingdom and Sweden. Thus, the emphasis appears to be less on the rapid modernization of the fleet and to be addressed more to accommodating the cyclical nature of certain sectors of the shipping industry in which Norwegian owners are heavily involved.

Exhibit IV-12

SUMMARY OF BENEFITS TO NORWEGIAN OPERATORS

(millions of dollars)

1971-1975

	1971	1972	1973	1974	1975
Program 1:					
Guarantee Institute	a	a	a	a	a
Program 3:					
Depreciation Allowances	54.3[b]	54.3	87.6	76.8	97.1
Program 4:					
Tax Free Reserves[g]	128.7[b]	128.7	218.1	233.7	169.2
Program 5:					
Lower Seaman Tax	15.6[c]	17.3[c]	19.8[c]	22.3	22.3[d]
Program 6:					
Coastal Subsidies	42.7[e]	48.4[e]	54.7[e]	62.0	70.2
Subtotal[f]	198.6	200.3	325.5	332.8	288.6

[a] Benefits estimated to begin in 1976.

[b] Estimated at 1972 level.

[c] Based on tax rate differential computed for 1974.

[d] Estimated at 1974 level.

[e] Estimated at levels decreased by 1974-1975 rate.

[f] Excluding Program 2: Guarantees for Coastal Vessels, and Program 6: Coastal Subsidies.

[g] Tax-free reserves consider the value of capital gains reserve only.

The weak liquidity positions of some Norwegian owners necessitated the creation of the Guarantee Institute for Ships and Drilling Vessels. The reserve fund has been funded to 4.0 billion kroner ($765 million) until 1980 and by June 1977 two thirds of this amount had been allocated. Some 1.8 billion kroner was designated to cover 32 tanker guarantees of 8.8 million dwt, while 1.1 billion kroner guaranteed the drilling rigs of nine firms.

The Norwegian shipping community feels that government aid provisions may not have provided liquidity to the extent that the owners deemed necessary, although the design of the reserve clauses in the tax law itself may not have anticipated that the depth of recession in the shipping industry would reach the proportions of the current slump. By mid-1975 when the Guarantee Institute was being proposed, 107 Norwegian ships of 11.5 million dwt were laid up including 84 tankers of 9.2 million dwt, 38 percent of the Norwegian tanker fleet.

The Norwegian tanker fleet was the fourth largest in the world after those of Liberia, Japan and the U.K. and had an average age of seven years at the end of 1975, one of the newest in the world. As of October 1, 1975, the tanker fleet included 57 ships of over 200,000 dwt, with another 23 ships on order. The composition of the Norwegian fleet at the end of 1975 consisted of the vessels and tonnage presented below in Table IV-1.

Table IV-1

OCEANGOING VESSELS OF 1,000 GRT AND OVER

	Number of Ships	Deadweight (millions)
Tankers	332	28.5
Bulk Carriers	318	16.7
Freighters	309	2.6
Other	32	-
Total	991	47.8

Source: Exhibit IV-13.

Although the Norwegian fleet was still among the largest and most modern in the world in 1975, its growth during the 1970-1975 period was slower than that of the world fleet. In 1968, Norway had the second largest fleet in terms of deadweight tonnage, exceeded only by the Liberian fleet. Since then, Japan and the United Kingdom have surpassed Norway in deadweight tonnage registered, and in 1975 the fleet tonnages of these two countries were 32 percent and 15 percent larger, respectively, than that of the Norwegian fleet.

Norway's share of the world fleet has declined steadily over the past ten years, dropping from 7.4 percent of the vessels registered in 1966 to 4.3 percent in 1975. In terms of deadweight tonnage, Norway's share has declined from 10.9 percent in 1966 to 8.6 percent in 1975. Exhibit IV-1 summarizes Norway's declining share of the total world fleet and also shows Norway's share of the tanker, bulk carrier, and freighter segments of the fleet.

While the Norwegian fleet has grown 48 percent in deadweight tonnage and 39 percent in gross registered tonnage from 1970 to 1975, the number of vessels in the fleet declined 16 percent from 1,173 to 991 (Exhibit IV-13). Employment in the merchant marine also declined, registering a 22 percent drop from 46.2 thousand in 1970 to 36.2 thousand in 1975. Norwegian nationals fared better than foreign nationals employed in Norwegian flag vessels. Their numbers declined 15 percent from 36.4 thousand in 1970 to 30.8 thousand in 1975. Foreign nationals employed dropped 45 percent during the same period from 9.8 thousand to 5.4 thousand.

Under Norwegian law, the master of a vessel and at least two-thirds of the crew must be Norwegians. In special cases, however, the Maritime Directorate may permit employment of an all-foreign crew.

Exhibit IV-13

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY
FLEET OPERATIONS

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: Norway

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
		Fleet Size Registered, Fleet Growth[b]						
Total Ships[a]	- Number	1,173	1,199	1,118	1,102	1,028	991	-3.3
	DWT	32,374	36,196	38,211	40,781	43,306	47,796	8.1
	GRT	19,586	21,705	22,665	23,894	25,095	27,167	6.8
Tankers	- Number	363	373	376	349	337	332	-1.8
	DWT	17,351	19,158	20,280	21,941	24,472	28,467	10.4
	GRT	9,813	10,699	11,204	12,023	13,319	15,207	9.2
Bulk Carriers	- Number	341	364	362	344	320	318	-1.4
	DWT	11,637	13,625	14,502	15,702	15,983	16,696	7.5
	GRT	7,194	8,338	3,754	9,280	9,381	9,749	6.3
Freighters	- Number	442	431	419	374	336	309	-6.9
	DWT	3,335	3,330	3,347	3,050	2,763	2,559	-5.2
	GRT	2,430	2,412	2,430	2,233	2,038	1,895	-4.9
		Deliveries to the Fleet[c] (where intended registry is known)						
Total Ships[a]	- Number	58	84	77	78	59	75	5.3
	DWT	3,876	4,108	4,062	6,385	5,182	6,869	12.1
	GRT	2,151	2,312	2,265	3,466	2,818	3,666	11.3
Tankers	- Number	21	34	21	22	29	39	13.2
	DWT	2,120	2,377	2,145	3,694	3,858	5,194	19.6
	GRT	1,083	1,239	1,098	1,867	2,058	2,725	20.3
Bulk Carriers	- Number	25	21	22	31	18	22	-2.5
	DWT	1,608	1,550	1,666	2,521	1,261	1,617	0.1
	GRT	944	907	930	1,414	719	904	-0.9
Freighters	- Number	11	26	31	21	12	14	4.9
	DWT	146	170	237	155	62	57	-17.1
	GRT	106	111	177	106	41	37	-19.0
		Vessels on Order at Year-End[c] (where intended registry is known)						
Total Ships[a]	- Number	254	231	186	290	299	263	0.7
	DWT	18,802	19,138	19,112	34,855	31,387	19,272	0.5
	GRT					18,653	11,211	NA
Tankers	- Number	35	73	86	173	179	124	7.8
	DWT	11,497	11,986	14,217	29,748	26,851	15,279	5.8
	GRT					15,822	8,751	NA
Bulk Carriers	- Number	92	75	53	69	64	59	-8.5
	DWT	6,711	6,504	4,532	4,330	4,227	3,529	-12.1
	GRT					2,629	2,135	NA
Freighters	- Number	77	78	47	48	56	79	0.5
	DWT	594	648	363	277	309	460	-5.0
	GRT					203	313	NA

Exhibit IV-13

Fleet Operations (continued)

Country: Norway

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Share of National Trade (percent)[g]							
Imports	37	NA	NA	NA	NA	37	NA
Exports		NA	NA	NA	NA	39	NA
Reported Financial Results (millions of dollars)							
Revenues[d]	2,178	2,416	2,411	2,761	3,110	NA	9.3
Profits					1,079[e]		NA
Outstanding Debt							
Employment[f]							
Nationals	36,346	34,533	34,478	33,294	32,339	30,758	-3.3
Total	46,173	44,459	43,972	41,462	39,738	36,164	-4.8

[a] Includes Combination Passenger/Cargo Vessels not shown separately.

[b] Source: Merchant Fleets of the World, Maritime Administration, U.S. Dept. of Commerce, semi-annual.

[c] Source: New Ship Construction, Maritime Administration, U.S Dept. of Commerce, annual.

[d] Excludes time freights from Norwegians, which were $177 million in 1974.

[e] Working profits from operations; before depreciation and overhead accounts.

[f] Source: Maritime Transport, Organization for Economic Cooperation and Development, annual.

[g] Source: Central Bureau of Statistics, Oslo, (preliminary).

As discussed previously, the Norwegian fleet has provided significant contributions to the Norwegian balance of payments. In Exhibit IV-5, it was estimated that the Norwegian shipping industry has contributed approximately $1.75 billion per year to the Norwegian current account between 1970 and 1975. These figures include the net costs of ship purchases and sales.

The Norwegian maritime aids to the fleet succeeded in supporting the development of a large modern and competitive fleet of new tankers capable of competing in cross-trade oil transport, and the modernization of other sectors of the fleet. The aids employed were designed to provide reserves for the cyclicality of the shipping industry but proved to be unable to permit owners to absorb the major down-turn in tanker demand that following the 1973 oil embargo. The creation of the Norwegian Guarantee Institute was a unique and thus far effective government measure to ease the financial strain of Norway's tanker owners.

3. Recent and Prospective Programs

The Norwegian government has recently begun several initiatives affecting the national fleet operators. These are:

- *The creation of the Guarantee Institite, which was previously mentioned, in order to ease liquidity problems of selected segments of the industry;*
- *Relaxation of Norwegian registration requirements;*
- *Specific government ownership initiatives to relax financial pressures on shipping companies and to maintain non-shipping enterprises; and*
- *New depreciation allowances as an incentive for placing new construction orders with domestic shipyards.*

The declining market for tanker tonnage has hit the Norwegian shipping industry particularly hard because of the number of large tankers in the fleet. By February 1976, 44 percent of the tanker fleet was laid up, but revenues from other sectors have kept most Norwegian owners from experiencing severe financial difficulties. With little reason to be optimistic about a strong recovery for shipping in 1976, however, the owners in mid-1975 sought credit assistance from the government to tide them over the depression in the market without their having to sell parts of their fleets at depressed prices.

The Norwegian Guarantee Institute for Ships and Drilling Vessels was established by the government with a 60 percent government contribution to the $180 million share capital and a 40 percent contribution from vessel owners, drilling vessel owners, and financial institutions. The Institute gives loans and loan guarantees to enable owners to meet carrying costs necessary to maintain possession of ships and drilling rigs presently in their fleets. It also has assisted owners in meeting financial commitments for cancellation fees. The Institute's maximum exposure was initially limited to $382 million but was subsequently raised to $765 million in June 1976. Commitments by late 1976 had reached $395 million.

The Norwegian Shipowners Federation had estimated that the requirement for guarantees by owners of ships and drilling rigs as approximately $1 billion--$580 million for ships, $450 million for drilling rigs--and they had asked the government to raise the ceiling on guarantees. The current ceiling is now expected to be sufficient to meet the needs of Norway's tanker and drilling rig owners. The needs of the dry bulk fleet have only recently exceeded expectations and the Norwegian Guarantee Institute may be tested again in this sector, which is more fragmented in both vessel ownership and financial structure.

The Norwegian government also granted permission in late 1975 for Norwegian owners to register some of their tonnage in foreign countries, including convenience flag countries, under certain circumstances--e.g., if manning costs are too high on a particular type of vessel, or if it is the best way to accommodate cargo preference rules of other countries. This change in government policy specifically recognizes it to be in Norway's interest to establish good relations with developing countries in the maritime area.

In addition to creating the Guarantee Institute for Ships and Drilling Vessels, the Norwegian government also provided specific assistance to a major shipowner, Hilmar Reksten, who faced serious liquidity problems in 1975. The Norwegian government authorized $38 million for public acquisition of Reksten's holdings in two non-shipping companies, Hoeyer-Ellefsen, an offshore platform builder, and Norsk Hydro.

Although the Norwegian fleet has absorbed a significant percentage of the Norwegian shipbuilding output over the last five years, there have been no major incentives or directives towards that end.

A recent temporary special law now provides an incentive to Norwegian owners to purchase from Norwegian yards. It provides for depreciation up to 25 percent above the cost of the contract on vessels ordered between February 15 and December 31, 1977 for delivery before 1979. The order must be in a government approved yard. In addition, losses generated by the depreciation can be carried forward for 10 years and can also be retroactively applied to 1976 earnings.

These measures are aimed at reducing the prices of Norwegian vessels, bringing them closer to the recent levels of Japanese prices.

The recent programs instituted by Norway appear to indicate several major policy shifts and suggest several important impacts on the Norwegian national fleet.

Although Norwegian owners have operated independently of the government and the national shipbuildng industry in the past, the establishment of the Guarantee Institute and incentives for home construction indicate a closer relationship in the future.

Also, with continued wage pressure and declining employment for seamen potentially exaggerated by the expansion of Norwegian owners into other flags, the future size of the Norwegian fleet is more likely to be given closer government review. As a small nation heavily engaged in cross-trading, impending unilateral or bilateral cargo preference legislation is a major threat to the current structure of Norway's fleet. Government action in response to world shipping developments to ensure the survival of the interests of the Norwegian fleet and the economy's ties to it may ultimately support "flagging out" vessels, joint ventures and other offshore activity.

C. AIDS TO THE NORWEGIAN SHIPBUILDING INDUSTRY

As discussed earlier, the Norwegian shipbuilding industry is significantly smaller in size than the shipping industry of the country. Nevertheless, in terms of employment, the shipbuilding industry accounted for 8.7 percent of 1974 industrial employment in the country and in several regions ranged between 11 and 20 percent of industrial employment. Principal assistance programs to the Norwegian shipbuilding industry are outlined in Exhibit IV-14.

The principal aids to the shipbuilding industry have been in the areas of credit assistance and tax allowances. These aids have been aimed at allowing the industry to remain competitive in terms of its ability to offer credit to customers, despite the limited capital markets available in Norway.

The following section discusses in detail the assistance programs in effect between 1970 and 1975. Section C.2. addresses the effectiveness of those aids and Section C.3. addresses recent and prospective programs.

1. Aid Programs

a. Principal Aids to the Norwegian Shipbuilding Industry

(i) *Investment Financing Assistance*

None

(ii) *Credit Assistance*

Program 1 - Second Mortgage Financing

The Norwegian Mortgage Institute grants loans to Norwegian yards for 20 percent of vessel costs. Loans are secured by a second mortgage on the vessel and are guaranteed by the state. Recent interest rates were 8 percent, only 0.7 percent above the rates on long-term government bonds for 1975. Considering the risk of second mortgage loans on ships, the rate provides a benefit to Norwegian yards in financing the supplier credits that they offer their customers. These loans can be used to finance vessels sold either to domestic or foreign customers.

Exhibit IV-14

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE NORWEGIAN SHIPBUILDING INDUSTRY

1970-1975

i. Investment Financing Assistance

ii. Credit Assistance

  Program 1 - Second Mortgage Financing
  Program 2 - First Mortgage Guarantees

iii. Tax Allowance Programs

  Program 3 - Customs Duty Rebates
  Program 4 - Initial Depreciation
  Program 5 - Reserve Funds
  Program 6 - VAT Exemption

iv. Direct Subsidies

v. Preference Programs

vi. Government Ownership

vii. Other

The total commitments by the Mortgage Institute during the 1970-1975 period are shown in Exhibit IV-15.

Although the Mortgage Institute loans covered only 20 percent of the cost of a new vessel, they nonetheless provided a significant benefit to Norwegian yards because the yards' access to domestic financing is limited by the small size of the Norwegian capital market.

The yards or owners usually secure financing for 50 percent of a vessel's cost from one of the four "Institutes", consortia of Norwegian commercial banks, or from foreign capital markets and use the government supported Mortgage Institute loans to raise the additional 20 percent on the Norwegian capital market, bringing total financing to 70 percent. The combination of the commercial loan and the Mortgage Institute loan usually results in a net cost to the borrower lower than the cost of a commercial loan for 70 percent of the vessel's cost.

By 1975, the Norwegian shipyards, due to the slump in the international shipping market, were having difficulty raising capital to finance new vessel constructions. The second mortgage financing provided by the Mortgage Institute became a less effective aid for the yards during this period due to the yards' diminished ability to raise first mortgage financing in international credit markets. After April 1975, the Norwegian government began a program of guarantees of the first mortgage loans, up to a level of $191 million. This program is described in the following section.

In 1976, the Mortgage Institute was authorized to provide second mortgage financing up to a level of 80 percent (from 70 percent) of the contract cost on domestic orders. Since first financing from the four Norwegian commercial banking Institutes, which are the principal sources of domestic ship financing, has been at 50 percent of the market value, the Mortgage

Exhibit IV-15

OUTSTANDING LOANS AND TERMS OF THE NORWEGIAN MORTGAGE INSTITUTE

	1970	1971	1972	1973	1974	1975
Total Outstanding Loans of the Mortgage Institute ($ millions)	NA	NA	237	254	268	315
Interest rate on Mortgage Institute Loans	7%	7%	7%	7%	8%	8%
Repayment Schedule (years)	10	10	10	10	10	8/12[a]

[a] Domestic vessels.

Source: Laneinstituttet for Skipsbjggerienne, Statement of Accounts, 1975, 1973, and interviews.

Institute now covers both the additional 10 percent[4] of the contract cost and the reduction in market value (below cost) of the vessels ordered. With reduced market values, this second mortgage money would represent a considerably greater percentage of the sales price.

Program 2 - First Mortgage Guarantees

Loans obtained by shipyards in foreign capital markets are guaranteed by the Ministry of Commerce and Shipping. This guarantee program was established by Parliament on April 29, 1975. Limits for loans guaranteed under this program were $191 million in 1975 but recently have been raised to $453 million. Commitments under the program were at $254 million in late 1976.

The guarantees have been approved only for special projects, such as an LNG design project. The guarantee commitments permit the yards to obtain financing from foreign sources of capital at lower rates than would otherwise be available to them.

(iii) Tax Allowance Programs

In addition to the relatively minor financing assistance, the Norwegian shipbuilding industry also has available a range of tax programs. These aids also are not particularly extensive. Included among the tax allowance programs are:

- *Customs Duty Rebates*
- *Initial Depreciation*
- *Tax Free Reserves*
- *VAT Exemptions*

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[4] *The by-laws of the Mortgage Institute allowed loans up to 30 percent of the construction cost.*

Program 3 - Customs Duty Rebates

Customs rebates are given to yards for 6 percent on the sale price of new vessels and 4 percent on the cost of vessel repairs. These rebates are viewed by some of Norway's competitors as construction subsidies since many of the materials imported by shipbuilders have no customs duty assessed on them. Based on the value of deliveries from Norwegian yards and an estimated 5.5 percent, the rebates have yielded the shipbuilding industry between $27 and $47 million per year over the study period.

Program 4 - Initial Depreciation

Initial depreciation on shipyard facilities is available on terms similar to the initial depreciation for shipowners described earlier. The accelerated depreciation is in addition to normal straight line depreciation and may be taken under either two options:

1. 1-1/2 times normal straight line rate until a cumulative 15 percent over straight line is reached, or

2. Up to 25 percent of the cost of investment in shipyard facilities may be taken in amounts not exceeding 50 percent of taxable corporate income.

In 1974, the Norwegian yards signed an agreement with the government covering expansion of the industry in the years 1975-1977. The shipyards agreed not to expand their shipbuilding capacity, without first obtaining permission from the Ministry of Industry. In return, the government agreed to review the problems that the yards were having in obtaining sufficient long-term credits to finance any expanded levels of ship production.

Program 5 - Tax Free Reserve Funds

Norwegian yards may establish reserve funds that permit them to defer or eliminate tax liability on profits earned in good years. These reserves are similar to those applicable to shipowners described earlier. These have not been used extensively by Norwegian shipyards.

Program 6 - Exemption from Value Added Tax

Deliveries, repairs and maintenance and vessels are exempt from the 13 percent non-deductible investment tax on new facilities and equipment. Shipbuilders pay the tax on the materials they purchase from suppliers but obtain a refund of the tax from the government. Whether this investment tax relief constitutes a benefit to shipyards is the subject of some controversy.

Norwegian shipyards are also exempt from Norway's 20 percent Value Added Tax on goods and services. Because most European shipyards are exempt from such taxes, this exemption constitutes an indirect aid common to nearly all shipbuilding industries.

(iv) Direct Subsidies

None

(v) Preference Programs

None

(vi) Government Ownership

None

(vii) Other

None

b. Benefits of Norwegian Assistance Programs to the Shipbuilding Industry

Exhibit IV-16 summarizes the benefits of Norwegian programs for the shipbuilding industry. As can be observed, the assistance provided this industry has been relatively minimal, ranging from about $32 million to $56 million, primarily based on the rebate of customs duties on vessels produced and repaired.

In 1975, the initial effects of new financing assistance programs raised the level of assistance. However, most of the effects of recently instituted programs will occur after 1975 and will be discussed in greater detail in Section III.C.3.

2. Effectiveness of Aids to the Norwegian Shipbuilding Industry

Norwegian shipyards delivered between 2.8 percent and 3.7 percent of the world shipbuilding industry's gross tonnage output in each year from 1970 to 1975. This share showed almost no change from the previous five-year period when it ranged from 2.9 percent to 3.8 percent. Exhibit IV-17 presents Norwegian shipbuilding activity over the study period.

The Norwegian yards' deliveries to Norwegian-flag operators have represented about two-thirds of their total deliveries in terms of tonnage in the past six years although this represented only about one-fourth of the new tonnage acquired by the Norwegian-flag fleet.

Deliveries from Norwegian yards surpassed one million GRT for the first time in 1973 and have averaged approximately one million GRT since then. This represents a rise of 33 percent from the 0.76 million per year average for 1970-1972.

Tankers represented an increasing portion of Norwegian shipbuilding activity in the 1970s, rising from 60 percent of gross tonnage delivered in 1970-1972 to

Exhibit IV-16

SUMMARY OF BENEFITS OF NORWEGIAN ASSISTANCE PROGRAMS TO THE SHIPBUILDING INDUSTRY

(1971-1975)

(millions of dollars)

	1971	1972	1973	1974	1975
Program 1:					
Second Mortgage Financing	4.7[a]	4.7	5.0	5.4	6.3
Program 2:					
First Mortgage Guarantees	-	-	-	-	3.6
Program 3:					
Customs Duty Rebates	27.1[a]	27.1	32.9	39.3	46.2
Subtotal[b]:	31.8	31.8	37.9	44.7	56.1

[a] Estimated at 1972 value.

[b] Excludes depreciation, reserves, and VAT allowances.

Exhibit IV-17

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY

SHIPBUILDING

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: Norway

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Deliveries[c]								
Total Ships[b]	- Number	33	54	58	41	44	42	4.9
	DWT	1,152	1,474	1,401	1,898	1,568	1,775	9.0
	GRT	642	845	791	1,091	916	1,034	10.0
Tankers	- Number	15	14	15	19	27	24	9.9
	DWT	873	825	884	1,457	1,264	1,464	10.9
	GRT	452	438	470	823	727	841	13.2
Bulk Carriers	- Number	8	13	14	9	5	6	-5.6
	DWT	197	493	387	376	234	244	4.4
	GRT	125	294	231	222	140	139	2.1
Freighters	- Number	10	27	29	13	13	12	3.7
	DWT	82	156	130	65	70	67	-4.0
	GRT	65	113	90	46	49	54	-3.6
Orders During Year[d]								
Total Ships[b]	- Number		58	8	72	39	46	-5.6[a]
	DWT		2,150	48	5,203	2,201	(949)	NA
	GRT							NA
Tankers	- Number		42	5	46	25	5	-41.3[a]
	DWT		1,772	37	4,618	2,019	(1,139)	NA
	GRT							
Bulk Carriers	- Number		4	1	9	3	2	-15.9[a]
	DWT		276	2	482	121	(95)	NA
	GRT							
Freighters	- Number		12	2	17	12	39	34.3[a]
	DWT		102	9	103	61	285	29.3[a]
	GRT							
Cancellations During Year[e]								
Total Ships[b]	- Number	0	3	0	2	5	7	23.6[a]
	DWT	0	55	0	12	1,686	2,416	159.4[a]
	GRT							
Tankers	- Number	0	1	0	1	4	7	62.7[a]
	DWT	0	50	0	2	1,680	2,416	163.7[a]
	GRT							
Bulk Carriers	- Number	0	0	0	0	0	0	NA
	DWT	0	0	0	0	0	0	NA
	GRT							
Freighters	- Number	0	2	0	1	1	0	NA
	DWT	0	5	0	10	6	0	NA
	GRT							

Exhibit IV-17

Shipbuilding (continued)

Country: Norway

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
		Orders Outstanding at Year-End[c]						
Total Ships[b]	- Number	147	148	98	127	117	114	-5.0
	DWT	6,344	6,965	5,612	8,905	7,852	2,712	-15.6
	GRT					4,875	1,679	NA
Tankers	- Number	46	73	63	89	83	57	4.4
	DWT	4,818	5,715	4,868	8,027	7,102	2,083	-15.4
	GRT					4,397	1,265	NA
Bulk Carriers	- Number	37	28	15	15	13	9	-24.6
	DWT	1,221	1,004	619	725	612	273	-25.9
	GRT					389	160	NA
Freighters	- Number	64	47	20	23	21	48	-5.6
	DWT	305	246	125	153	138	356	3.1
	GRT					90	254	NA
		Reported Financial Results						
Revenues		NA	NA	492.1	597.7	715.2	839.9[f]	19.5[g]
Profits								
Outstanding Debt								
		Employment						
Employees at Year-End		NA	NA	30,352	29,966	31,794	33,400 direct 12-15,000 ancillary	3.2[g]

[a] 4-year annual growth rate, 1971-1975.

[b] Includes Combination Passenger/Cargo Vessels not shown separately.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Source: Derived from orders outstanding, deliveries, and cancellations. Approximate due to timing differences in sources.

[e] Source: Fairplay International Shipping Weekly, World Ships on Order, quarterly.

[f] Value of production during year. $870.5 million in 1976.

[g] 3-year annual growth rate, 1972-1975.

75 percent in 1973 and 79 percent in 1974. The tanker tonnage under construction or on order at the end of 1973 represented 90 percent of the total orderbook and this percentage remained constant for the end-1974 orderbook as well. On the world orderbook tankers represented 82 percent of the tonnage in 1973 and 83 percent in 1974. This concentration in building tankers placed Norwegian yards in a vulnerable position when the tanker overcapacity situation occurred. Tanker cancellations in Norwegian yards exceeded 4 million dwt in 1974-1975, a substantial sum compared to the 1.7 million dwt in annual deliveries that Norwegian yards averaged in the past three years, 1973 to 1975. These cancellations, combined with the rate of new orders running at only 46 percent of deliveries in 1974 and 25 percent of deliveries in 1975, have reduced the orderbook backlog of Norwegian yards to an average of only 1.5 years of work at 1975 rates of delivery. Akers, the largest shipbuilding group in Norway, was particularly hard hit by cancellations.

3. Recent and Prospective Programs

Although Norwegian shipyards' orderbooks were heavily dependent on tanker tonnage when the tanker market declined, the yards had some cushion due to the healthy size of the backlog. Of the 7.9 million dwt on order in Norwegian yards at the end of 1974, 90 percent was tanker tonnage, but the total deadweight tonnage on order represented 5 years of work at the 1974 rate of delivery.

Cancellations during 1975 eliminated 1.5 years worth of work from the orderbook. The Aker Group, which had been responsible for over half the tonnage built in Norway during the years before the decline in the tanker market, suffered from massive cancellations of ULCCs in 1974 and 1975. By August 1975, 11 vessels worth about $750 million had been cancelled from Aker's orderbook. Included in these were four ULCCs, each of 420,000 dwt, cancelled by Hilmar Reksten and four 370,000 dwt vessels cancelled by Biornstad and

Co. and Hagb, Waage. Akers' orderbook at July 1975 showed only 14 vessels totaling 128,000 dwt. On April 1, 1977 only one vessel on order in Norway exceeded 100,000 dwt and Akers' orderbook consisted of seven vessels totalling 87,000 dwt.

With government policy taking a go-slow approach toward the developing offshore oil industry, the work for drilling platforms and oil industry supply vessels has not provided much employment for the yards to replace the lost ship construction work.

A major shift in Norwegian government policy occurred in early 1975 when it relaxed its tight restrictions on foreign currency flows. This permitted shipowners to establish overseas companies and was also beneficial to a number of small Norwegian yards who formed North West Engineering A/S. The intended area of specialization for the NWE group is supply and support vessels for the offshore oil industry, but the group's first major order came from Indonesia for 30 small vessels for its inter-island fleet. The deal partially hinged on the credit terms which included a $92 million loan to the Indonesian government by A/S Eksportfinans of Oslo payable over 15 years starting three years after delivery and a Norwegian government loan of $13 million to Indonesia for development of the inter-island fleet.

Thus, the combination of the Norwegian government's relaxing currency restrictions and participating in the financing package has helped Norwegian yards, at least in this case, to secure foreign orders in a fiercely competitive market.

As mentioned in the discussion of aids to the Norwegian fleet, the government in 1975 set up the Guarantee Institute for Ships and Drilling Vessels, jointly funded by the government, vessel and rig owners, and financial institutions. The $765 million in authorized loans and guarantees for Norwegian owners also provides a large measure of security for Norwegian shipyards because ships for domestic owners account for approximately two-thirds of Norwegian yards' deliveries.

In late 1976, the Norwegian government allocated $29.5 million in the 1977 budget to help maintain employment in Norwegian shipyards. The new allocations were divided between various Ministries and state lending institutions and were aimed at enabling fishermen, local authorities and the Norwegian government to spend more next year on new ships and ship repairs. The ships to be built are mainly small ferries and service vessels.

Further government ordering may be forthcoming soon for seven coastal surveillance craft worth approximately $200 million and five to nine passenger cargo vessels worth up to $94 million. The government intends that all of these vessels should be built in Norway despite the fact that cheaper prices could be obtained abroad.

Ultimately, in March 1977, the Norwegian government passed a legislative package of additional assistance to the shipbuilding industry. The shipbuilding package is over and above the special depreciation allowances made available to shipowners for orders in domestic yards. The magnitude of the depreciation allowance is aimed at reducing the price differential between Norwegian yards and Japanese and LDC yards.

The principal elements of the recent Norwegian program for shipbuilding are:

- *Increased shipyard credit for domestic owners. Financing assistance to domestic owners in the form of second mortgages on up to 80 percent of the vessel cost. The first priority mortgage would be on about the first 40 percent. The second mortgages would carry fixed interest rates of approximately 8.5 to 9 percent, for up to 12 years, or for a shorter period with a 2 year grace period. The Second Mortgage Institute previously provided second mortgage financing for exports only.*

- *As noted under Program 2, limits on loan guarantees were raised from $191 million to $453 in 1976.*

- *The government will guarantee up to $76.5 million (400 million Norwegian kroner) of loans to domestic owners. Previously, guarantees were available only on export orders. The guarantees will cover between 15 and 20 percent of the total cost and thus will cover between half to two-thirds of the second mortgage money. The guarantees are only available for ships ordered during 1977 for delivery before 1979.*

- *Special loans to shipyards aimed at restructuring employment. A limit of $1.91 million has been placed on each loan. The total funding of this program is $57.4 million in 1977 and an additional $38.25 million after 1977. The loans are interest free for five years and carry 7 percent for the subsequent three years. Due to their structure, the loans will not be useful for subsidizing ship orders.*

- *Special funds for retraining of $38.26 million have been made available to cover a percentage of the wages.*

- *A special aid program for exports to developing countries has been established with a maximum of $95.66 million to assist in obtaining approximately $383 million worth of orders. The aids are in line with OECD guidelines concering the financial terms of LDC programs which require at least a 25 percent gift element. The aid typically is taking the form of favorable credit terms, such as 90 percent financing over 15 years at 5-6 percent, with a grace period of three years.*

  The funding for this program has been almost entirely committed.

With the combined package of incentives to the Norwegian owners, special aids for restructuring and retraining and favorable export credits, the nature and level of assistance to the shipbuilding industry have been dramatically changed.

While in 1975 shipbuilding aid was primarily the $46.2 million of customs rebates and $10 million of second mortgage financing and first mortgage guarantees, the shape of government aid to shipbuilding was radically different by early 1977. By that time the government had guaranteed up to two-thirds of the yards' orderbooks through the Guarantee Institute and had ordered nearly $300 million of vessels. Shipyard credit programs had been expanded as had guarantees for loans to domestic owners. Retraining funds and the provision of nearly $100 million for maritime-related foreign aid highlighted a radically different program of assistance to Norwegian shipbuilders.

V. THE MARITIME AIDS OF SWEDEN

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V. SWEDEN'S MARITIME AIDS

A. SUMMARY

1. Background

The Swedish shipbuilding industry has ranked second in output of the shipbuilding countries of the world during the period 1970 through 1975. The industry's production has over that period ranged between three and ten times the total deliveries to the Swedish national fleet. While only 10 to 30 percent of the shipbuilding output has been delivered to the Swedish national fleet, that volume represented about 70 percent of the vessels delivered to Swedish operators in all years but 1974. (Exhibit V-1)

The deadweight of the Swedish national fleet has represented between 2.1 and 2.6 percent of the world fleet over the study period, despite the rapid growth of the world fleet. Steady additions to the Swedish national fleet have resulted in continued modernization of all segments of the fleet, with reduction in the average ages of all vessel types through 1974. On average the national fleet has remained considerably more modern than the world fleet in total. (Exhibit V-2)

The national fleet figures reflect the principal objective of Sweden's aid programs for the national fleet, which is to encourage owners to acquire modern high productivity vessels in order to offset high wage costs and allow Swedish operators to remain competitive in the cross trades which provide the main source of earnings for the industry.

Exhibit V-3 shows the rapid expansion of the Swedish tanker and bulk carrier fleet as well as the replacement of one-fourth of Sweden's freighter fleet with modern tonnage during the study period.

Exhibit V-1

SUMMARY OF NATIONAL FLAG FLEET AND SHIPBUILDING ACTIVITY
1970-1975

SWEDEN

	1970	1971	1972	1973	1974	1975
Total Deliveries - Swedish Shipyards						
Vessels	38	37	38	39	37	33
DWT (000)	3,401	3,317	3,695	4,353	4,236	4,320
GRT (000)	1,759	1,736	1,957	2,293	2,256	2,213
Deliveries for Swedish Registry from Swedish Shipyards						
Vessels	8	10	10	13	8	5
DWT (000)	329	747	945	1,287	882	1,225
GRT (000)	177	391	511	680	453	617
Deliveries for Swedish Registry from World Shipyards						
Vessels	16	19	28	28	30	11
DWT (000)	454	1,084	1,264	1,585	2,401	1,667
GRT (000)	272	604	722	876	1,337	874
Swedish Owners Share of Swedish Shipyards Deliveries (Percent)						
Vessels	21	27	26	33	22	15
DWT (000)	10	23	26	30	21	28
GRT (000)	10	23	26	30	20	28
Swedish Shipyards Share of Deliveries to Swedish Owners (Percent)						
Vessels	50	53	36	46	27	45
DWT (000)	72	69	75	81	37	73
GRT (000)	65	65	71	78	34	71

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce, annual.

Exhibit V-2

SWEDISH FLEET

SHARE OF WORLD FLEET AND AVERAGE AGE

1966-1975

	1966	1968	1970	1972	1974	1975
--------------------Vessels Registered Under Swedish Flag------------------------ Percent of World Fleet						
Total Fleet[1]	2.4	2.1	1.8	1.6	1.5	1.4
Tankers	2.3	2.0	1.9	1.7	1.4	1.5
Bulk Carriers	4.0	3.6	2.6	2.2	2.2	2.1
Freighters	2.0	1.9	1.7	1.5	1.3	1.2
---------------Deadweight Tonnage Registered Under Swedish Flag------------------ Percent of World Fleet						
Total Fleet[1]	2.6	2.5	2.1	2.1	2.2	2.3
Tankers	2.5	2.2	1.9	2.0	1.9	2.2
Bulk Carriers	4.8	4.3	3.1	2.8	3.5	3.2
Freighters	2.0	2.0	1.8	1.6	1.4	1.4
---------------------Sweden Fleet - Average Age of Vessels----------------------- (Years)						
Total Fleet[1]	11	9	9	8	8	8
Tankers	7	6	6	6	6	6
Bulk Carriers	9	7	7	7	6	7
Freighters	13	10	11	9	9	10
---------------------World Fleet - Average Age of Vessels------------------------ (Years)						
Total Fleet[1]	17	13	13	12	12	12
Tankers	11	11	11	11	11	11
Bulk Carriers	11	9	8	8	9	9
Freighters	16	15	13	13	13	13

[1] Includes Combination Passenger/Cargo not shown separately.

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce, semi-annual.

Exhibit V-3

COMPARISON OF FLEET GROWTH - SWEDEN AND WORLD

1970-1975

(deadweight tons in millions)

GROWTH IN REGISTERED FLEET

	Sweden			World		
	Deadweight Tons 1970	Deadweight Tons 1975	Percent Change	Deadweight Tons 1970	Deadweight Tons 1975	Percent Change
Total Fleet	6.9	11.2	62	327.0	556.6	70.2
Tankers	2.9	4.9	69	153.1	302.2	97.4
Bulk Carriers	2.4	4.8	100	77.2	150.1	94.5
Freighters	1.6	1.4	(12)	92.4	101.2	9.6

NEWBUILDING DELIVERIES TO THE FLEET

1971-1975

	Sweden		World	
	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT
Total Fleet	8.0	116	254.8	78
Tankers	4.6	159	157.1	103
Bulk Carriers	3.0	125	73.5	95
Freighters	.4	25	24.0	26

SHARE OF NEWBUILDING DELIVERIES USED FOR NET FLEET GROWTH AND FOR VESSEL REPLACEMENT

	Sweden		World	
	Percent for Net Fleet Growth	Percent for Vessel Replacement	Percent for Net Fleet Growth	Percent for Vessel Replacement
Total Fleet	54.1	45.9	90	10
Tankers	44.2	55.8	95	5
Bulk Carriers	83.2	16.8	99	1
Freighters	0.0*	100.0*	37	63

*All new deliveries were used to replace vessels deleted from the 1970 fleet.

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

2. Conclusions

The assistance programs to the shipbuilding industry have been almost exclusively in the area of credit assistance.

The benefits of the assistance programs has been estimated at a relatively modest level, ranging between $10 and $50 million per year. However, through the mechanisms of state guarantees of second mortgage financing over $1.5 billion worth of credit has been provided to assist in the financing of virtually all exports by the industry, while direct export financing of about 25 percent of the value of exports has been provided through the Swedish Export Credit Association.

The guarantees allowed shipyards to obtain financing for supplier credits in other countries. Currency realignments significantly increased the cost of that financing, ultimately placing the Swedish yards in severe financial difficulty.

Most of the growth in the output of the shipbuilding sector was in tanker tonnage. With significantly reduced demand for tankers and cancellations, the financial pressures on the industry reached critical levels. Sweden has, as a result, been forced to institute the most extensive assistance programs for its shipbuilding industry of any of the countries studied.

The recent government programs have involved the expansion of the guarantee program to a level of $5.6 billion, of which almost half will support speculative constructions. The amount of direct aid provided by the Swedish government in conjunction with the nationalization of all but one major shipyard has cost $229 million and potentially an additional $1.2 billion may be ultimately required.

The assistance to the shipowners, primarily in the form of indirect tax allowances, has resulted in substantially higher levels of benefit to that industry.

The assistance programs are similar to Norway's. However, due to the more diversified structure of the much smaller Swedish shipping industry, no special programs similar to the Norwegian Guarantee Institute to redress liquidity problems have been required.

Incentives for Swedish owners to construct new vessels in Swedish yards have been developed, but due to the relative sizes of the fleet and the shipbuilding industry, the potential impact on shipbuilding from these incentives is less than the impact of similar incentives in Norway.

As in Norway, the high costs of wages have forced Swedish owners to seek relief through offshore ownership, although chartered tonnage represents a larger percentage of Swedish shipowner receipts than for the larger Norwegian fleet. While recent court rulings have eased restrictions on the sale of Swedish vessels to escape high operating costs, the replacement of existing general cargo tonnage by highly efficient specialized vessels is a longer term solution to Sweden's competitive stance. In the meantime, a large segment of the national fleet has been sold with restrictions on the availability of charterback agreements.

B. AIDS TO THE SWEDISH NATIONAL FLEET

1. Aid Programs

The principal goal of Sweden's aid programs for the national flag fleet has been to encourage owners to acquire modern high-productivity vessels. Sweden's wage costs are among the highest in the world, and high-productivity vessels are viewed as necessary if Sweden is to compete effectively in world trade. Of total gross freight receipts of the Swedish fleet, which were $1,336[1] million in 1974, approximately 58 percent were derived from cross trading. An additional $457 million in revenues was earned by Swedish operators from chartered foreign vessels.

Thus, with high wage Swedish seamen manning the vessels, it is important that the vessels be highly productive in order to compete effectively with lower-wage operators for cargos in the cross trades. In the home trades, means of aiding Swedish operators other than encouraging the acquisition of high productivity vessels might be possible, but the home trades provide a small enough portion of the fleet's total employment that aids designed to meet conditions in the cross trades are necessarily the most important.

A comparison of the daily costs for three types of vessels under Swedish registry and under four other registries illustrates the magnitude of the wage disadvantage faced by Swedish owners in international shipping. (Exhibit V-4)

The principal Swedish aid programs for the national flag fleet in effect between 1970 and 1975 are listed in Exhibit V-5. The remainder of this section discusses these programs in detail. Section B.2. addresses the effectiveness of the aid programs and Section B.3. discusses recent and prospective programs.

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[1] *Dollar figures in this chapter have been converted at the 1975 exchange rate of 4.1522 Swedish kroner to the dollar.*

Exhibit V-4

SUMMARY OF DAILY COSTS FOR VARIOUS TYPES OF VESSELS UNDER SELECTED FLAGS 1974-1976

	1974			1975			1976		
	Total Daily Costs	Daily Manning Costs	Manning Costs Share of Total Costs	Total Daily Costs	Daily Manning Costs	Manning Costs Share of Total Costs	Total Daily Costs	Daily Manning Costs	Manning Costs Share of Total Costs
Bulk Carrier Approx. 20000 DWT									
Sweden	$2790	$1580	57%	$3590	$2170	60%	$4170	$2500	60%
Norway	2670	1420	53%	3180	1670	53%	3520	1850	53%
United Kingdom	2130	1090	51%	2680	1390	52%	2890	1550	54%
Greece	1700	850	50%	2130	1030	48%	2320	1160	50%
Liberia	1770	850	48%	2130	1030	48%	2320	1160	50%
Liberia-nonITF*	1470	590	40%	1740	740	43%	1940	860	44%
Liner Vessels Approx. 15000 DWT									
Sweden	$2530	$1420	56%	$3420	$2100	61%	$3890	$2410	62%
Norway	2320	1420	61%	3060	1650	54%	3400	1810	53%
United Kingdom	2010	1020	51%	2390	1310	55%	2730	1460	53%
Greece	1560	780	50%	1960	930	47%	2130	1040	49%
Liberia	1610	760	47%	1960	930	47%	2130	1040	49%
Liberia-nonITF*	1350	520	39%	1550	670	43%	1760	760	43%
Tankers Approx. 250000 DWT									
Sweden	$7100	$2370	33%	$8130	$3130	38%	$8910	$3700	42%
Norway	6620	2130	32%	7890	2630	33%	8330	2920	35%
United Kingdom	5680	1300	23%	6450	1670	26%	7180	1850	26%
Greece	5200	990	19%	5980	1200	20%	6480	1270	20%
Liberia	5200	990	19%	5980	1200	20%	6480	1270	20%

*Pay below ITF minimum

Source: Bremen Institute of Maritime Economics, Shipping Statistics; November 1976

Exhibit V-5

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE SWEDISH NATIONAL FLEET

1970-1975

i. Investment Financing Assistance

Program 1 - Swedish Ships Mortgage Bank

ii. Credit Assistance

iii. Tax Allowance Programs

Program 2 - Depreciation Allowances
Program 3 - Tax Free Reserves
Program 4 - Special Investment Credits

iv. Direct Subsidies

v. Preference Programs

Program 5 - Cabotage Protection

vi. Government Ownership

vii. Other

As Exhibit V-5 shows, most of the assistance programs for the Swedish national fleet are in the area of tax allowance programs. Other programs include investment financing assistance and cabotage protection. These latter have been relatively minor.

The limited capital markets in Sweden are unable to support the financial requirements of the Swedish fleet and other industrial financing. This has caused the Swedish government to employ extensive tax-related mechanisms to permit owners to better generate the required funds internally as well as government bank guarantees to increase the availability of loanable funds. The use of direct financing assistance has been small relative to the size of the Swedish fleet.

The tax allowance programs have been utilized to allow shipowners to generate most of the necessary investment capital internally rather than through external borrowing. These indirect aids have allowed the Swedish shipowners to combine rapid depreciation allowances and gains on ship sales to finance modern ship capacity.

a. Principal Aids to the Swedish National Fleet

(i) Investment Financing Assistance

Program 1 - Swedish Ship Mortgage Bank

Investment financing assistance to Swedish operators is provided through a joint program under the 50 percent government-owned Swedish Ships Mortgage Bank (SSMB) and the Bank for the Granting of Loans Secured by Second Mortgage (BGLSSM). The purpose of the banks is to contribute to the financing of Swedish shipping companies, particularly for small and mid-sized ships, through the granting of long-term loans and guarantees of such loans. Both banks have guarantee commitments in the form of Swedish Government guarantee funds. These government commitments totaled $34.9 million as of 1976 and the banks were authorized to raise up to 10 times that amount through domestic bonds. The 15 year credit periods extended to owners by the banks reduces debt service terms and increases the benefits of depreciation allowances for Swedish owners while government participation through guarantees has ultimately afforded owners a 100 basis point (1 percentage point) reduction in interest charges over alternative financial sources.

The banks provide up to 15-year first mortgages on up to 50 percent, and up to 10-year second mortgages to a level of 70 percent of the appraised value of the ship. The loans are redeemed in equal annual installments of one-fifteenth and one-tenth per annum, respectively.

Exhibit V-6 summarizes the annual loans issued and outstanding amounts of loans for the two banks.

Between 1970 and 1974 the value of new additions to the Swedish fleet averaged approximately $408 million annually. Thus, the new loans by these banks represented about 12 percent of the financing of new Swedish flag vessels.

The loans, however, are provided at 0.5 percent above the rates at which the bonds were sold. The rates on bonds issued by the banks during the study period were roughly equal to government bond rates. Based on an estimated spread of 1 percent, the benefit to Swedish shipowners was approximately $2 million per year between 1970 and 1976, assuming such long-term financing would be available elsewhere at such rates.

(ii) Credit Assistance

Credit assistance is not applicable to national flag operators.

Exhibit V-6

LOANS OF THE SWEDISH SHIP MORTGAGE BANK AND BANK FOR THE GRANTING OF LOANS SECURED BY SECOND MORTGAGES

(millions of dollars)

Year	New Loans	Outstanding Loans
1966	17.1	38.3
1967	34.2	68.4
1968	40.9	100.4
1969	25.3	116.3
1970	26.5	131.7
1971	31.6	149.8
1972	39.0	173.4
1973	46.5	193.1
1974	25.3	195.1
1975	32.5	208.1
1976	63.6	238.7

Source: Svenska Skepphypolekskassons Och Skeppsfartens Sekundarlanekassa, 1972, 1975, preliminary 1977.

(iii) Tax Allowance Programs

As noted earlier, the tax allowance programs are the most significant form of assistance to Swedish operators. Three tax allowance programs have been made available to Swedish operators between 1970 and 1975. These are:

- *Rapid depreciation allowances, which provide an important source of funds for investment;*
- *Tax free reserves, which provide shelter for earnings during profitable years and for profits from vessel sales. These reserves subsequently provide a source of funds for reinvestment and funds to support operations in leaner years; and*
- *A special investment credit, temporarily available between 1971 and June 30, 1973, which performed a similar function as the depreciation allowances.*

Program 2 - Depreciation Allowances

Normal depreciation, available to all corporations, partners, or individuals in Sweden, encourages modernization of capital equipment by allowing 30 percent per year to be deducted on a declining balance or 20 percent per year on a straight line basis. Taxpayers are permitted to use whichever method is most advantageous each year, and may switch back and forth freely. The five year write-off period is the most rapid of any of the six countries, with the exception of the free depreciation allowances of the United Kingdom.

Initial depreciation of up to 30 percent of the contract price may be taken before delivery by owners of ships and airplanes.

Program 3 - Tax Free Reserves

Several tax-free or tax-deferred reserve funds are available to Swedish owners for the purpose of sheltering income during good years. The availability of these reserves removes some of the risk associated with business cycles and the reserves have been a great benefit to owners in the cyclical shipping industry.

The availability of these reserve funds cushioned the impact of tanker lay-ups by Swedish owners in 1975. Many of the Swedish tankers are owned by large diversified shipping groups, and profits from other sectors, retained with the help of the reserve funds mentioned above, put Swedish owners in a stronger liquidity position than tanker owners in many other major countries.

The major reserve funds used by shipowners have been:

- *A fund into which shipowners may deposit the proceeds from the sale of a ship and defer tax on that gain until a withdrawal is made against it. If the deposits to the fund are withdrawn to acquire new ships, the tax deferral is made permanent.*
- *An investment reserve into which owners may deposit up to 40 percent of pre-tax profits. Of the amounts deposited into this fund, 46 percent must be deposited to a non-interest-bearing account in the Riksbank. The remainder may be used as part of the owner's working capital. Taxes are deferred on deposits to this fund and are eliminated if withdrawals are used for a government-approved purpose.*

The Swedish shipowners ranked third behind Japan and Germany in the percentage of deliveries for replacement (Exhibit I-3) and second-hand sales are an extensive activity for the Swedish Fleet. (Exhibit V-7)

Exhibit V-7

VALUE OF VESSEL ADDITIONS AND DELETIONS OF THE SWEDISH FLEET

1970-1975

(millions of dollars)

Year	Additions	Deletions
1970	145.4	92.1
1971	203.1	71.2
1972	348.3	73.8
1973	491.3	174.2
1974	735.9	149.6
1975	524.7	168.9

Source: Sjofart 1975, (1970-1974, Sveriges Officiella Statistik, Statistiska Centralbyran, Stockholm, 1977.

With the 5-year depreciation schedules, the proceeds of second-hand sales are therefore essentially entirely a gain which can be placed into the tax deferred fund. However, since the tax deferral is only permanent if the funds are used to acquire new ships, the incentive for reinvestment is high.

Although the fund is extensively used, at times the gains from ship sales are required for operating capital. In 1976, an estimated 1.2-1.5 million deadweight tons were sold, including some new tonnage. This is more than twice the average of the previous 6 years and a portion of the gains were used for operating capital and did not go into the reserve funds.

Despite the apparent advantages of the income sheltering investment reserve, these reserves are not used extensively by Swedish operators due to the requirement for no interest deposits.

Program 4 - Special Investment Credits

An investment credit, which was part of a national effort to improve the economy, was available from January 1, 1971 to June 30, 1973. The credit took the form of a write-off against income and was 20 percent of the productive asset's cost in 1971 and 1972 rising to 30 percent on items ordered by June 30, 1973 and delivered by the end of 1974. The investment credit did not reduce the depreciable basis of the asset. Based on the value of vessel additions during the period, tax credits of $304.7 million were available to Swedish shipowners on deliveries between 1972 and 1974.

(iv) Direct Subsidies

None

(v) Preference Programs

Program 5 - Cabotage Protection

Cargo preference provides protection of the cabotage trade although most Swedish owners are strongly opposed to cargo preference schemes since they derive such a large percentage of their revenues from cross trading. As a result, the vessels of countries that have reciprocal agreements with Sweden permitting Swedish vessels to carry cargos in their cabotage trades, are allowed to operate in the Swedish coastal trade. The vessels of Norway, the United Kingdom, the Netherlands and Denmark are permitted to carry cargo in Sweden's cabotage trade under these agreements.

The foreign-flag share of Sweden's inland shipping has grown from 2 percent to 20 percent in the past 15 years. According to a survey by Chalmers Institute of Technology, this erosion of market share and high wage costs borne by Swedish owners have contributed to falling profitability for Swedish owners in the domestic trades in recent years. The survey presented the following index of basic wage costs for operators of 999 grt, 1,050 bhp vessels under different flags. (Exhibit V-8)

(vi) Government Ownership

None

(vii) Other

None

b. Benefits of Assistance Programs to the Swedish National Fleet

Exhibit V-9 summarizes the estimated benefits from the assistance programs. The primary assistance programs in terms of benefits are the tax allowance programs. The depreciation allowances have been estimated as contributing to the benefits derived from the reserves established from the gain on ship sales.

The total benefit of the program would have ranged between $40 million and $90 million over the study period, except for the impact of the investment credits between 1972 and 1974. The large cash flows derived from these programs have contributed to the relatively

Exhibit V-8

INDEX OF WAGE COSTS
(Swedish Flag = 100)

Sweden	100.0
Norway	91.2
W. Germany	75.0
Finland	71.4
Netherlands	66.3
Denmark	62.8
Belgium	58.9
United Kingdom	48.5

Source: Chalmers Institute of Technology

Exhibit V-9

BENEFITS OF ASSISTANCE PROGRAMS
1970-1975
(millions of dollars)

	1970	1971	1972	1973	1974	1975
Program 1: Swedish Ship Mortgage Bank	2.6	3.0	3.5	3.9	3.9	4.2
Program 2: Depreciation Allowances	a	a	a	a	a	a
Program 3: Tax Free Reserves	46.1	35.6	36.9	87.1	74.8	84.5
Program 4: Special Investment Credits	-	-	34.8	49.1	220.8	-
SUBTOTAL	48.7	38.6	75.2	140.1	299.5	88.7
Program 5: Cabotage Protection (no estimate of the value of the program has been made)						

[a] Rapid depreciation has been assumed to lead to 100 percent of the sale value of ships as gain which then is accounted for under tax free reserves.

stable liquidity portions of the Swedish fleet. By early 1977 only a few Swedish owners were troubled by banks seeking collateral for loans given for the construction of tankers which had subsequently declined in market value.

2. Effectiveness of Aids to the Swedish National Fleet

The principal goal of the government programs has been to make the Swedish fleet competitive through the acquisition of modern, high-productivity vessels. The government has tried to accomplish this through the use of indirect aids that provide tax relief to Swedish owners. In the 1970-1975 period, these programs have been very effective in securing a modern merchant marine fleet for Sweden. The average age of the Swedish fleet is among the lowest in the world, the tanker and bulk carrier segments of the fleet being especially modern. The fleet's average age at the end of 1974 was 8 years with the tanker and bulk carrier segments each averaging 6 years and freighters averaging 9 years.

Between 1970 and 1975, the Swedish owners increased the tonnage of their tanker fleets by 126 percent compared to world tanker fleet growth of 97 percent, and in bulk carriers, the Swedish fleet grew by 101 percent compared to the world's 94 percent growth. The Swedish freighter fleet declined by 14 percent, however, as the world freighter fleet increased 10 percent. With no major direct subsidies and the limited indirect aids described above, the Swedish shipping industry took delivery of 8 million dwt from 1971 to 1975, inclusive, an amount equal to 116 percent of the tonnage of its 1970 fleet.

As shown in Table V-1, the Swedish shipping industry has earned a considerable surplus abroad, net of the charters for foreign flag vessels. Employment has decreased over time as the number of vessels has decreased, despite the rapid growth in deadweight tonnage of the fleet. (Exhibit V-10).

Exhibit V-10

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY
FLEET OPERATIONS

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: Sweden

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
				Fleet Size Registered, Fleet Growth[b]				
Total Ships[a]	- Number	366	359	337	322	330	324	-2.4
	DWT	6,898	7,594	8,309	9,239	11,230	12,723	13.0
	GRT	4,520	4,866	5,217	5,647	6,761	7,511	10.7
Tankers	- Number	80	77	78	75	74	79	-0.3
	DWT	2,887	3,135	3,795	4,097	4,935	6,524	17.7
	GRT	1,054	1,753	2,066	2,190	2,626	3,442	26.7
Bulk Carriers	- Number	78	82	79	79	90	80	0.5
	DWT	2,375	2,852	3,017	3,706	4,839	4,785	15.0
	GRT	1,483	1,759	1,863	2,224	2,852	2,816	13.7
Freighters	- Number	204	196	175	164	160	152	-5.7
	DWT	1,623	1,594	1,481	1,421	1,437	1,397	-3.0
	GRT	1,321	1,292	1,217	1,166	1,199	1,175	-2.3
				Deliveries to the Fleet[c] (where intended registry is known)				
Total Ships[a]	- Number	16	19	28	28	30	11	-7.2
	DWT	454	1,084	1,264	1,585	2,401	1,667	29.7
	GRT	272	604	722	876	1,337	874	26.3
Tankers	- Number	8	7	4	9	7	6	-5.6
	DWT	320	527	774	626	1,129	1,575	37.5
	GRT	172	270	381	323	581	807	36.2
Bulk Carriers	- Number	3	6	5	8	15	2	-7.8
	DWT	92	506	328	873	1,189	64	-7.0
	GRT	58	293	191	484	667	42	-6.3
Freighters	- Number	5	6	19	11	7	3	-9.7
	DWT	42	51	162	86	81	29	-7.1
	GRT	42	41	150	69	82	25	-9.9
				Vessels on Order at Year-End[c] (where intended registry is known)				
Total Ships[a]	- Number	73	75	64	45	37	50	-7.3
	DWT	4,973	4,237	5,575	5,964	4,241	3,274	-8.0
	GRT					2,475	1,965	NA
Tankers	- Number	19	23	32	21	24	25	5.6
	DWT	2,113	1,555	3,316	4,354	3,540	2,768	5.5
	GRT					1,986	1,628	NA
Bulk Carriers	- Number	21	21	17	17	7	12	-10.6
	DWT	2,581	2,398	2,120	1,534	682	456	-29.3
	GRT					452	288	NA
Freighters	- Number	33	31	15	7	4	12	-18.3
	DWT	279	284	139	76	15	48	-29.7
	GRT					10	35	NA

Exhibit V-10
Fleet Operations (continued)
Country: Sweden

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
	Share of National Trade (percent)[f]						
Imports	14	13	14	13	13	14	0.0
Exports	26	25	27	25	23	23	-2.4
	Reported Financial Results (millions of dollars)						
Revenues[d]	1,091	1,173	1,173	1,393	1,793	1,629	8.4
Profits							
Outstanding Debt							
	Employment[e]						
Nationals	N.A.						
Total	16,605	15,628	15,589	15,087	15,852	14,697	-2.4

[a] Includes Combination Passenger/Cargo vessels not shown separately.

[b] Source: Merchant Fleets of The World, Maritime Administration, U.S. Dept. of Commerce, semi-annual.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Including revenues from chartered foreign flag vessels.

[e] Source: Maritime Transport, Organization for Economic Cooperation and Development, annual.

[f] Source: Sjofart 1975 (1970-1974), National Central Bureau of Statistics, Stockholm.

Table V-1

SWEDISH SHIPPING INDUSTRY GROSS RECEIPTS, COSTS, AND SURPLUS FROM FOREIGN TRANSACTIONS

1971-1975

(millions of dollars)

	Gross Receipts	Costs	Surplus
1971	1,149	654	495
1972	1,138	631	506
1973	1,331	717	614
1974	1,788	954	834
1975	1,591	994	597

Source: Sjofart 1975, (1970-1974), Sveriges Officiella Statistik, Statistiska Centralbyian, Stockholm (1977).

3. Recent and Prospective Programs

The recession and tanker overcapacity situation posed serious problems for the Swedish fleet. By mid-1975, 22 tankers and combination carriers were laid up of the total 74 tankers and 90 bulk carriers in the fleet at the end of 1974. The major shipping companies, however, were able to weather the downturn in the market due to their financial strength. This strength is a result of:

- *Diversified operations by most owners that left them less vulnerable than some Norwegian owners and others whose operations are more concentrated in the tanker sector.*

- *Strong liquidity positions due in part to the owner's ability to use rapid depreciation and reserves to shelter taxable income in good years such as 1973 and 1974.*

By 1976, however, the magnitude of the tanker slump and to a lesser extent the problems in other sectors of the shipping industry were causing concern among Swedish owners and the Swedish government. In April, over 30 percent of Swedish tonnage was in lay-up including 50 percent of the tanker tonnage. This was the highest percentage of any country and was approximately triple the percentage of the world fleet laid up. Recently, the owners' financial position has become more troubled, especially in the wake of the 1975-1976 national crewmen's wage agreement which increased owners' labor costs by at least 25 percent in 1975 and 20 percent in 1976[2]. The deteriorating financial position of Swedish owners has led them to seek government help in a number of areas.

- *Credit guarantees of $350 million have been requested by the Swedish Shipowners Association. The Department of Industry has conducted two studies of owners' financial condition, with action by the Swedish Riksdag expected in the spring of 1977. The two studies conducted in mid-1976 and in early 1977, however, did not conclude that the Swedish shipping industry liquidity position was critical, although a few operators were found to be in some difficulty.*

- *Exchange rate guarantees have been requested to protect operators from losses on their foreign currency revenues. In 1973, approximately one-third of the fleet's revenues from*

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[2] *Including fringe benefits wage costs may have risen as much as 80 percent over the two years.*

transactions with foreign companies were in currencies other than Swedish kroner. Total gross revenues for the Swedish fleet from overseas shipping were $1.63 billion in 1975, most of which was exposed to the 1976 revaluation of the kroner, which cost owners as much as $30 million in lost conversion value. The government has prepared a bill to grant some relief in this area and has indicated the protection is likely to be in the form of insurance for which a premium is charged.

- *Owners have requested that they be allowed to transfer some of their older, less sophisticated tonnage to other flags, presumably convenience flags, to stem the operating losses generated by these older vessels. The crewmen's unions are strongly opposed to such a move. In early 1977 Swedish ships received permission to "flag abroad" provided a special allowance is granted and a new Swedish vessel with a similar number of berths is ordered.*

During 1976 an estimated 1.2-1.5 million deadweight tons of Swedish ships, new and old, were sold abroad for a variety of reasons including the inability to compete due to high manning costs. This reduction in the Swedish fleet was certainly an important factor in the above government action on flag of convenience issues. The 1977 devaluation of Swedish currency will serve to reduce the cost base of Swedish ships, increase foreign currency earnings while simultaneously increasing the cost of debts incurred by Sweden in other currencies.

As discussed in the section on shipbuilding, the government has proposed an incentive package to Swedish operators for construction of vessels in Swedish yards, which combines 70 percent guarantees and "depreciating loans" on the remaining 30 percent. However, given the current demands on shipowners' liquidity and the large sales of idle second-hand ships in 1976, even 100 percent financing is not a very attractive package.

C. AIDS TO THE SWEDISH SHIPBUILDING INDUSTRY

1. Aid Programs

The Swedish government has employed a wide array of aids to assist its shipbuilding industry. The main purposes of the aids have been:

- *To give Swedish yards access to credit in foreign capital markets at rates that are competitive with those obtained by shipyards of other countries. These permit Swedish yards to offer supplier credits at competitive rates.*
- *To encourage modernization of shipbuilding facilities so that high productivity might offset to some extent the labor cost disadvantage faced by Swedish yards.*
- *To offset somewhat the business cycle risks of the shipbuilding industry by offering shipyards liberal tax benefits via access to rapid depreciation provisions and tax-deferred or tax-free reserve funds.*

Although the types of aids have been diverse and assistance has been made available for virtually all construction, the benefits of the programs have been minor relative to the scale of Swedish shipyard output and averaged only 3.8 percent of industry revenues. Exhibit V-11 summarizes the principal assistance programs available to Swedish shipbuilding between 1970 and 1975, which are discussed in the remainder of this section. Section C.2. addresses the effectiveness of those aids. Section C.3. discusses recent and prospective programs.

a. Principal Aids to Sweden's Shipbuilding Industry

(i) Investment Financing Assistance

There are no institutions providing direct financing assistance to Swedish shipyards. The Swedish tax allowances and direct government loans and guarantees, discussed in later sections, provide the principal means for support of shipyard investment.

Exhibit V-11

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE SWEDISH SHIPBUILDING INDUSTRY

1970-1975

i. Investment Financing Assistance

ii. Credit Assistance

  Program 1 - Export Financing
  Program 2 - Government Guarantees of Loans
  Program 3 - Swedish Ships Mortgage Bank

iii. Tax Allowance Programs

  Program 4 - Inventory Write-offs
  Program 5 - Rapid Depreciation
  Program 6 - Investment Credit
  Program 7 - VAT Exemption

iv. Direct Subsidies

v. Preference Programs

vi. Government Ownership

  Program 8 - Government Ownership

vii. Other

(ii) Credit Assistance

Due to the limited size of the capital markets in Sweden, the principal form of assistance to Swedish shipyards has been through the provision of credit facilities. There are three institutions providing this function:

- *The Swedish Export Credit Association provides direct loans to shipyards for the financing of supplier credits. Funds are drawn primarily from domestic sources (e.g., the National Pension Insurance Fund), and are primarily directed to ship exports. However, the size of this program is small compared to other programs and the magnitude of Swedish ship exports.*
- *The Second Mortgage Institute provides government guarantees which permit shipyards to secure financing, primarily from overseas markets, for supplier credits. This program has been the principal aid to Swedish shipyards and has recently been expanded greatly.*
- *The Swedish Ships Mortgage Bank, discussed under aids to the national fleet provides a source of capital for the construction of Swedish flag vessels.*

Program 1 - Export Financing

Financing for export orders has been provided through the Swedish Export Credit Association, 50 percent owned by the Swedish government, which makes loans to shipyards for the purpose of financing the supplier credits offered by the yards to export customers. The Association offers similar credit in Swedish Crowns to all capital goods export industries, but shipping has accounted for most of the funding. As of 1975, 70 percent of the outstanding loans were to shipyards.

For the years 1970 to 1975, exports represented between 66 percent and 81 percent of the value of newbuilding deliveries from Swedish yards and between 70 percent and 90 percent of the gross tonnage.

Loan commitments to shipbuilding by the Swedish Export Credit Association have been $486.4 million during the 1970-1975 period and the outstanding balance of loans to shipyards was $330.4 million at the end of 1975, out of a total of $475.9 million to all industries. Exhibit V-12 summarizes the amounts of loans granted by the Swedish Export Credit Assoiation to the shipbuilding industry.

Loans of the Swedish Export Credit Association have typically been at rates of 7.5 percent, or approximately the rate on long term government bonds, for eight year terms. The majority of the obligations of the Association have been drawn from the National Pension Insurance fund.

In 1975, despite improvements in the general availability of capital and the easing of interest rates, Swedish shipyards encountered considerable difficulties in refinancing the credits that they offer to shipowners. The depressed state of the international shipping market was primarily responsible for the reluctance to finance new ship loans. Swedish yards have historically done much of their borrowing in Swiss francs. Financing in major European currencies such as the Swiss franc or Deutsche mark was particularly expensive during 1973 and 1974, with average call money and interbank rates 10 percent and 12 percent respectively in 1973 and 9 percent and 9.6 percent respectively in 1974. During 1975 and 1976, however, it became even more difficult as the European recession deepened and the German banks, after several international bank failures, became more concerned about the quality of their portfolios and became unwilling to undertake financing of riskier activities such as foreign shipbuilding.

Exhibit V-12

FINANCING OF EXPORT CREDITS FOR SHIPS BY SWEDISH EXPORT CREDIT ASSOCIATION

1970-1975

(millions of dollars)

	1970	1971	1972	1974	1974	1975
New Financings	75.1	70.3	32.5	67.0	102.8	138.7
Outstanding Loans	165.5	202.3	195.1	218.7	271.2	330.4
Total Value of Exports						
--Newbuildings	243	308	361	538	677	582
--Repairs	20	24	33	35	44	57
Total	263	332	394	574	721	639
New Financings as a Percent of the Value of Newbuildings (%)	31	23	9	12	15	24

Source: Fartygs Finansiering, Betankande av Varvskreditulredningen, Statens Offentliga Utredningar Industridepartementet, 1975; interviews.

As a result, the Association loans have increased significantly between 1972 and 1975, but as shown in Exhibit V-12 have represented a small proportion of the value of shipyard output. In the following section, increases in the second mortgage guarantee program were employed to make up for the declining availability of first mortgage money.

Conservatively estimating a 2 percent interest benefit on the outstanding Swedish Export Credit Association loans, the benefits of this program ranged from $3.3 million to $6.6 million per year over the study period.

Program 2 - Second Mortgage Institute

Government guarantees are provided for loans to shipyards and are the principal aid to Swedish shipyards. These guarantees, administered by the Second Mortgage Institute, permit the shipyards to secure financing in domestic and overseas capital markets at favorable rates of interest. The loans are secured by second mortgages on the ships delivered and cover 25-30 percent of the contract price. Since the size of Sweden's capital markets is not sufficient to support the borrowing needs of Swedish shipyards and shipowners, the government guarantees are important to the yards in that they give the yards access to the larger foreign capital markets for loans which might be difficult or very expense to obtain without the government's backing.

Exhibit V-13 summarizes the amounts of guarantees authorized and extended as of June 30 for the years 1970 to 1975. Also shown are the yearly increases in the authorized levels of guarantees. Over the five year period between 1970 and 1975, the amount of guaranteed financing increased by $903 million, approximately 26 percent of the total value of new vessels delivered from Swedish yards. That Second Mortgage Institute's guarantees were widely utilized

Exhibit V-13

SWEDISH GOVERNMENT GUARANTEES ON SECOND MORTGAGE INSTITUTE LOANS FOR SHIPS BUILT IN SWEDISH YARDS

(as of June 30)

	1970	1971	1972	1973	1974	1975
Amount of Financing Provided by Second Mortgages Guaranteed by the Second Mortgage Institute ($ millions)	337.2	457.6	662.3	746.6	749.5	1,240.3
Maximum Guarantees Authorized	380.0	530.6	838.6	908.0	1,038.7	1,567.1

Source: Fartygs Finansiering, Betankande av Varvskreditulredningen, Statens Offentliga Utredningar Industridepartementet, 1975; interviews.

can be determined from the 26 percent of the value of all 1970-1975 Swedish construction that was guaranteed. Allowing for some guaranteed vessels that were not delivered and deliveries to Swedish owners, nearly all Swedish export ship orders would appear to have utilized the state guarantee program.

Government guaranteed loans to Swedish shipyards saved the most credit-worthy ship purchases at Swedish shipyards a minimum of about 25 basis points from market rates during the period. Since 1974, financing of sales to less credit-worthy purchasers would probably have been difficult at any market rate without the guarantees from the Swedish government. Because of the small domestic capital markets in Sweden, Swedish shipyards financed much of their sales abroad and suffered from the appreciation of both the Swiss franc and the DM against the dollar and the Swedish kroner. From 1971 through 1976 the Swedish kroner appreciated 23 percent against the dollar, while the DM rose 52 percent and the Swiss franc rose over 60 percent during the period.

Purchasers from Swedish yards place their loans in money markets throughout Europe and the evaluation of the government guarantee program can consider only the differential that it provides and not the actual levels of rates which vary depending on the market in which the borrowing occurs.

Interest rates on second mortgages would likely be quite high or potentially not available without the state guarantee. At a minimum it may be estimated that the program saved the yards on average approximately 2 percent in interest rates. Based on the outstanding guarantees, the benefit to the shipyards can be estimated to have increased from $6.7 million in 1970 to $24.8 million in 1975.

A differential of 2 percent over the 5 year median length of the guaranteed loans is equivalent to approximately 5-6 percent on the value of the financing. This would have been quite advantageous were it not for the effects of currency revaluations of 18 percent over the period.

Exhibit V-14 summarizes the currencies in which the guaranteed loans were obtained by the shipyards. As Exhibit V-14 shows, less than 25 percent came from Swedish currency sources. The largest source of loans were Swiss francs, which accounted for about 45 percent of the loans between 1973 and 1975.

The Swiss franc, in particular, increased approximately 34 percent relative to the Swedish crown between 1972 and 1975. As a result, far more than the benefit of the financing assistance was lost due to the requirement to repay the expensive loans. This has created serious financial difficulties for the Swedish shipbuilding industry.

As noted above, however, the guarantee program has been utilized for virtually all exports and has been the principal vehicle employed by the Swedish government to support the shipbuilding industry. The program has recently been greatly expanded in order to supplement the limited first mortgage financing and to provide major support for the Swedish shipbuilding industry over the next few years. This is discussed in greater detail in Section V.C.3.

Program 3 - Swedish Ships Mortgage Bank

Construction of Swedish-flag vessels is financed through the Swedish Ship Mortgage Bank. This source has been important in financing small and medium sized ships for Swedish owners. The first mortgage loans are at government bond rates plus 0.5 percent, are payable over periods up to 15 years, and cover up to 50 percent of the ship's cost. A more complete discussion of Swedish Ship Mortgage Bank loans is provided in Section V.B.1. of this report on aids to the Swedish-flag fleet.

Exhibit V-14

PERCENTAGE OF GUARANTEED LOANS BY CURRENCY OF LOAN
1972-1975

Currency	1972 (%)	1973 (%)	1974 (%)	1975 (%)
Swedish Kr	20	21	27	24
U.S. Dollar	34	25	21	27
Swiss franc	38	46	45	44
Deutch Mark	7	7	6	5
Belgium franc	1	1	1	1
Total in Dollars (millions)	$658	$749	$869	$1,110

Source: Fartygsfinansiering, Betankande av Varvskreditutredningen, Statens Offentliga Utredningar, 1975:101, Industridepartementet, Stockholm 1975.

Swedish companies generally rely heavily on internally generated funds for primary capital needs. Internally generated funds in Swedish companies generally provide close to 90 percent of financing requirements as compared with about 60 percent in the U.S. and 20-30 percent in Japan. This high ratio of equity to debt financing results in large Swedish companies being financially sound and generally good credit risks and therefore would benefit only from government financing programs with competitive interest charges. Ship owning companies, while generally having a substantial percentage of equity in the financing of the overall firm due to the amortization of older vessels, generally finance about 70 percent of the cost of a new vessel in the capital markets. The vessel is the sole collateral for these loans making them riskier than bonds of other corporations of the same size and structure. As a result, the Ship Mortgage Bank provides financing which would not be available at all during periods of tight capital markets and which would be relatively expensive at all times.

Other important sources of financing in Sweden include the three large domestic banks: the Svenska Handelsbank, Gotebank, and the Skandinaviska Enskildabanken--which control 70 percent of Swedish banking; the National Pension Insurance Fund, which is a government operated pension plan for nearly all Swedish workers; and investment consortia, which generally include foreign partners who want to invest in Sweden. There are several of the latter consortia devoted primarily to ship financing whose foreign investors seek advantages of ship ownership and rely on their Swedish partners for knowledge of shipping.

The Swedish government tightly controls the structure of interest rates in the private markets through a fixed structure of rates pegged to the central bank (Riksbank) discount rate. The private lending rate is set 300-325 basis points above the discount rate to provide banks with an average spread of 3.8 percent on private loans. This spread is low by European standards and leads to a creative mixture of traditional private lending and lending in the unpegged call money market during periods of tight money.

The Swedish Ships Mortgage Bank and other programs enable shipowners to minimize the effects of vacillations in the overall domestic capital markets. During the period of 1970 to 1975 the long-term government bond yield, to which Ship Mortgage Bank loans are pegged, varied between 7.23 and 8.79 percent on yearly averages, while the private lending rate varied from 8.00 to 10.25 percent and the prime lending rate in Germany, an important external source of Swedish ship financing, varied from 6.99 to 12.59 percent on yearly averages, or three times as widely as Swedish Ships Mortgage Bank loans.

(iii) Tax Allowances

Program 4 - Inventory Writeoffs

In order to prevent Swedish companies from having to report profits due to inflation in the value of inventories that they hold, Swedish tax law permits the company, after writing off obsolete inventories completely, to write down the balance of its inventory to a floor of 40 percent of its value on a cost or market value basis. Cost is determined on a first-in-first-out basis.

Normally, this would not apply to ships under construction. However, in situations in which the contract is cancelled for a vessel in progress or for the construction of a vessel by the shipyard on speculation, the importance of this tax code may increase.

Program 5 - Rapid Depreciation

The rapid depreciation and reserve fund provisions described under aids to the shipping industry are also available to the shipbuilding industry. These, however, are not estimated to have provided significant benefit to the shipbuilding industry over the study period.

Program 6 - Special Investment Credit

The investment credit described under aids to the national-flag fleet was also available to shipyards. The investment credit permitted a 20 percent write-off of the cost of capital investments against income in 1971 and 1972 and 30 percent for orders placed in the first half of 1973 that would be delivered by the end of 1974. The Swedish shipyards had capital expenditures of $30 million in 1971, $41 million in 1972, $76 million in 1973, and $146 million in 1974.[3] The value of the investment credit to shipyards may be estimated to have been approximately $3.3 million in 1971, $4.5 million in 1972, $12.5 million in 1973, and $24.1 million in 1974.[4]

The Swedish shipyard investments in the 1970s were significantly higher than the levels of investment in the previous fifteen years. Between 1955 and 1970, investments at Swedish shipyards ranged between approximately $10 million and $40 million annually. In 1973 through 1975, however, investments were $76 million, $146 million, and $202 million. Thus, the tax credit appears to have stimulated significant new investment as the yards sought to modernize their facilities in order to produce vessels more efficiently and to accommodate the requirements for larger vessels such as VLCCs and ULCCs.

It is difficult to assess if any of the reported 1975 investments were also affected by the tax credit. Planned investment for 1976 declined to $133 million, with no significant additions expected that that year.

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[3] *Source: Swedish Shipbuilding 1975, Swedish Shipbuilding Association, p. 28.*

[4] *Computed on the basis of a 55 percent tax rate on corporate income for national and municipal income taxes. Assumes all capital investments used the full investment credit available in each of the above years.*

Program 7 - VAT Exemption

The Value Added Tax (VAT) paid by suppliers on items they sell to shipbuilders is returned to the shipbuilders by the government. There is no VAT assessed on ships sold to either foreign or domestic buyers. As discussed previously, it is arguable whether the credit of indirect taxes should not be considered an aid to the shipbuilding industry.

(iv) Direct Subsidy

There are no direct subsidies provided to the Swedish shipbuilding industry.

(v) Preferences

Preferences have also not been employed in Sweden. Swedish shipowners have operated in a totally free environment vis-a-vis the shipbuilding industry. Recent government programs have continued this posture, providing incentives to Swedish owners as opposed to direct preference measures.

(vi) Government Ownership

Program 8 - Government Ownership

Direct government ownership has been used in Sweden and has ultimately led to government ownership of all major shipyards with the exception of Kockums by mid 1977.

- *In 1963, 50 percent of the Uddevalla yard was acquired. The remaining 50 percent was bought in 1970. The government share of capital was increased from $9.6 million to $24.1 million in 1971.*

- *In a joint Salen Shipping/Swedish government rescue of the Gotaverken yard in 1971, the government provided a 10 year loan of $18.1 million with a four year grace period and* *guaranteed another loan of $18.1 million. In 1974, $6.0 million of the loaned funds were converted to 10 percent equity paritici-pation, with the remainder to be amortized over 10 years.*

- *On July 1, 1975, the government took over 100 percent of the shares of the Eriksberg Shipyards in Bothenburg. The takeover involved a nominal sum to the Brostrom group, which was required to pay Eriksberg $55 million before the takeover, 60 percent of which was financed by a government guaranteed loan. Brostrom also agreed to order two bulk carriers from the yard.*

In May 1977 the Swedish government commenced parliamentary proceedings for the reorganization of Eriksberg, Uddevallavarvet, Karlskrona, and Gotaverken group shipyards into one state shipbuilding company after several years of study. The study investigated the problems involved in the reorganization and also how much cash will be needed both to get the venture off the ground and to cover the losses already incurred by the yards involved. The losses incurred by the 51 percent government-owned Gotaverken group in 1975 and the first half of 1976 were approximately $136 million, and the losses forecast for the Eriksberg yard until its scheduled closing in 1979 are approximately $240 million[5]. The total amount of the government package includes $922 million in direct government subsidies and $2,500 million in state credit guarantees.

The decision of the government to close the Eriksberg shipyards after it completes its orderbook in 1979 reflects the government's belief that a reduction in shipbuilding capacity by the major shipbuilding nations is necessary in light of the reduced levels of demand that are expected to exist for the rest of the decade. Eriksberg accounted for 22 percent of the tonnage delivered from Swedish yards in 1975.

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[5] *A direct aid of $228.8 million for the Eriksberg losses was established in 1977, and $156.5 million for Gotaverken.*

The plan for reducing capacity at Sweden's shipyards recommended to the government by the Shipbuilding Council calls for a reduction in volume of deliveries to approximately 2 million dwt per year by 1978 from the current 4.5 million dwt per year. This would entail a reduction in shipbuilding employment of 30 percent or about 8,000 workers.

The adoption of these targets by the Swedish government represented the first firm commitment to reduce shipbuilding capacity by any of the major shipbuilding nations.

(vii) Other

None

b. Benefits of Swedish Assistance Programs to the Shipbuilding Industry

Exhibit V-15 summarizes the benefits of the assistance programs to Swedish shipbuilders. Excluding the financing assistance to Swedish shipowners, a large part of which financed Swedish built vessels, the aid to the shipbuilding industry has ranged from $10 million to $50 million over the study period.

The largest assistance program has been the Second Mortgage Institute, which quadrupled over the period. The special investment credit potentially provided a significant benefit during 1973 and 1974. However, as discussed above and in greater detail in Section C.3., past assistance levels are vastly outweighed by current programs.

2. Effectiveness of Aids to the Swedish Shipbuilding Industry

The principal government programs in existence over the past five years have supported one of the most modern, efficient shipbuilding industries in the world,

Exhibit V-15

BENEFIT OF SWEDISH ASSISTANCE PROGRAMS TO THE SHIPBUILDING INDUSTRY

1970-1975

(millions of dollars)

	1970	1971	1972	1973	1974	1975
Program 1: Export Financing	3.3	4.0	3.9	4.4	5.4	6.6
Program 2: Second Mortgage Institute	6.7	9.2	13.2	14.9	15.0	24.8
Program 3: Swedish Ships Mortgage Bank	a	a	a	a	a	a
Program 5: Rapid Depreciation	b	b	b	b	b	b
Program 6: Special Investment Credit	-	3.3	4.5	12.5	24.1	-
Program 8: Government Ownership	-	14.5	-	-	6.0	-
Subtotal[b]:	10.0	31.0	21.6	31.8	50.5	31.4

[a] Included under assistance to shipowners.

[b] Excludes Program 7: Value Added Tax Exemption.

but the extremely high labor cost[6] in Swedish yards combined with financial blows from fixed price contracts and currency losses have made it very difficult for Swedish yards to compete effectively for new orders. (Exhibit V-16). This, in turn, has caused a trend toward increasing the direct government ownership of the industry. With the increased government holdings in the Gotaverken group and in Eriksberg, the only major yard in Sweden that remains privately owned is Kockums which delivered about 23 percent of the industry's gross tonnage in 1975.

The government programs helped the Swedish yards stay competitive in the world shipbuilding market from the late 1960s through 1973, even in the face of strong competition from Japan. During this period, Sweden maintained its second place ranking in tonnage delivered, exceeded only by Japan. Sweden also remained competitive in landing new orders for its yards, gaining a share of world orders that placed it second in the world in three of the five years from 1969 to 1973. Exhibits V-17 and V-18 present measures of Swedish shipbuilding activity over the study period.

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[6] *Comparative wage scales for shipbuilding and repair in major shipbuilding countries, 1974.*

	Germany	*Japan*	*Norway*	*Sweden*	*U.K.*	*USA*
			(dollars per hour)			
Average hourly earnings	*4.13*	*3.56*	*4.28*	*5.31*	*2.46*	*4.85*
Total compensation per hour (includes items such as private pensions, social security, etc.)	*6.25*	*3.83*	*n/a*	*6.33*	*2.76*	*6.49*

Source: Statistical Quarterly, Shipbuilders Council of America, Fourth Quarter 1974.

Exhibit V-16

PERCENTAGE OF WORLD ORDERS PLACED IN PRINCIPAL SHIPBUILDING COUNTRIES

1969-1975

	1969	1970	1971	1972	1973	1974	1975
Sweden	7.4	6.7	3.6	10.8	7.5	4.4	0.6
Japan	42.4	44.2	54.1	63.0	48.6	38.4	49.2
Other	50.2	49.1	42.3	26.2	43.9	57.2	50.2
World	100.0	100.0	100.0	100.0	100.0	100.0	100.0
World Gross Tonnage (millions)	30.1	41.0	30.8	30.4	73.6	28.4	13.8

Source: Lloyd's Register of Shipping Annual Report.

Exhibit V-17

VALUE OF DELIVERIES
NEWBUILDINGS AND SHIP REPAIRS FROM SWEDISH YARDS

1970-1975

($ millions)

	1970	1971	1972	1973	1974	1975
Merchant Ships						
--Newbuildings	301	429	515	738	875	886
--Repairs	52	61	63	78	86	109
Total Merchant Ship Deliveries	353	490	578	816	961	995
Navy Yard and General Work	81	121	92	103	121	149
Grand Total	434	611	670	919	1082	1144

Source: Swedish Shipbuilding 1975, The Swedish Shipbuilders' Association, Annual Report, 1976.

Exhibit V-18

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY

SHIPBUILDING

Oceangoing Vessels of 1,000 Gross Tons and Over

(DWT and GRT in Thousands)

Country: Sweden

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Deliveries[c]								
Total Ships[b]	- Number	38	37	38	39	37	33	-2.8
	DWT	3,401	3,317	3,695	4,353	4,237	4,320	4.9
	GRT	1,759	1,736	1,957	2,293	2,256	2,213	4.7
Tankers	- Number	20	25	16	21	27	27	6.2
	DWT	2,626	2,685	2,007	2,173	3,309	3,703	7.1
	GRT	1,288	1,378	1,001	1,104	1,757	1,892	8.0
Bulk Carriers	- Number	9	5	13	15	10	6	-7.8
	DWT	696	552	1,604	2,131	927	617	-2.4
	GRT	397	299	871	1,158	499	322	-4.1
Freighters	- Number	9	7	9	3	0	0	-100.0
	DWT	79	80	84	49	-	0	-100.0
	GRT	74	59	85	31	-	0	-100.0
Orders During Year[d]								
Total Ships[b]	- Number		39	37	82	36	16	-20.0[a]
	DWT		2,846	5,033	12,289	2,952	2,200	-6.2[a]
	GRT							
Tankers	- Number		25	37	68	22	7	-27.3[a]
	DWT		1,666	5,064	11,333	1,473	1,973	4.3[a]
	GRT							
Bulk Carriers	- Number		10	(1)*	10	14	8	-5.4[a]
	DWT		1,159	(41)	895	1,478	219	-34.1[a]
	GRT							
Freighters	- Number		4	1	4	0	1	-29.3[a]
	DWT		21	10	71	0	8	-21.4[a]
	GRT							
Cancellations During Year[e]								
Total Ships[b]	- Number	1	4	0	20	1	7	47.6
	DWT	226	125	0	1,035	8	2,992	67.6
	GRT							
Tankers	- Number	1	3	0	17	1	7	47.6
	DWT	226	10	0	979	8	2,992	67.6
	GRT							
Bulk Carriers	- Number	0	0	0	3	0	0	NA
	DWT	0	0	0	66	0	0	NA
	GRT							NA
Freighters	- Number							
	DWT							
	GRT							

Exhibit V-18
Shipbuilding (continued)

Country: Sweden

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Orders Outstanding at Year-End[c]							
Total Ships[b] - Number	109	107	106	129	127	103	-1.1
DWT	12,191	11,595	12,933	19,834	18,541	13,429	2.0
GRT					11,578	8,443	NA
Tankers - Number	65	62	83	113	107	80	4.2
DWT	7,974	6,945	10,002	18,183	16,339	11,617	7.8
GRT					10,134	7,269	NA
Bulk Carriers - Number	31	35	21	16	20	22	-6.6
DWT	4,040	4,532	2,887	1,651	2,202	1,804	-14.9
GRT					1,444	1,166	NA
Freighters - Number	13	10	2	0	0	1	-40.1
DWT	177	118	44	-	-	8	-47.6
GRT						7	NA
Reported Financial Results							
Revenues[f]	437	611	670	919	1,082	1,144	21.2
Profits							
Outstanding Debt							
Employment							
Employees at Year-End							
-Direct	24,500	26,400	27,300	28,600	29,900	27,300	2.19
-Staff & Foremen							
-Workers							
-Ancillary						30,000	NA

[a] 4-year annual growth rate, 1971-1975.

[b] Includes Combination Passenger/Cargo Vessels not shown separately.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Source: Derived from orders outstanding, deliveries, and cancellations. Approximate due to timing differences in sources.

[e] Source: Fairplay International Shipping Weekly, World Ships on Order, quarterly.

[f] Value of deliveries.

3. Recent and Prospective Programs

With the overcapacity situation in the world tanker fleet that developed in 1974, the Swedish yards were particularly vulnerable since they had concentrated many facilities on the building of VLCCs and ULCCs. As the volume of new tanker orders plunged, Sweden's share of world orders dropped sharply. After averaging 7.2 percent of the world's gross tonnage ordered during the five years ending in 1973, Sweden's yards captured 4.4 percent in 1974 and 0.6 percent in 1975. Another measure of Sweden's vulnerability is the large percentage of exports in Sweden's total tonnage output. Its orderbook tonnage at the end of 1975 was 82.5 percent for export, just marginally below Japan's export percentage.

Table V-2

EXPORT TONNAGE ON ORDER -
PERCENTAGE OF TOTAL GROSS TONS ON ORDER

December 31, 1975

Country	Export %
Japan	83.7
Sweden	82.5
W. Germany	77.5
France	55.7
Norway	30.7
United Kingdom	16.6

Source: New Ship Construction, Maritime Administration, U.S. Department of Commerce, 1975.

In addition, deliveries of the Swedish shipbuilding over the period 1970-1975 were more than four times the total deliveries to the Swedish national fleet. Thus, any policy options that the Swedish government might have for encouraging additional ordering by the national fleet in domestic yards would have a more limited potential impact in Sweden than such options might have in a country whose yards have a larger dependence on domestic fleet orders.

Japan has continued to take the lion's share of new orders. Sweden's yards, meanwhile, booked orders for only two new ships in 1976 through August and these were part of an agreement between Salen Shipping and the Swedish government whereby Salen agreed to place an order for two ships at Eriksberg in return for the government's increasing its ownershp of Salen's Gotaverken group of shipyards from 9.5 percent to 51 percent.

The government arranged a similar deal with Brostrom in 1975 in which the government took over the Brostrom-owned Eriksberg yard for a nominal sum and Brostrom agreed to order two bulk carriers from Eriksberg in return. Brostrom was also required to pay a $55 million contribution to Eriksberg before the government take-over. Sixty percent of this contribution was financed by a government-guaranteed loan to Brostrom. Eriksberg had lost $32 million in 1971-1973, and $24 million in 1974 before it was decided that a commercial solution to Eriksberg's problems was impossible. The losses at the Eriksberg yard were due in large part to exchange rate losses on financing as the Swedish crown depreciated against the Swiss franc loans. The two orders from Brostrom were part of only nine contracts for 69 thousand gross tons placed in Swedish yards in 1975. With deliveries of 2.3 million gross tons and the cancellation of seven large tankers in 1975, the backlog in Swedish yards declined sharply. Had it not been for the 11.5 million gross ton backlog on the books of Swedish yards at the end of 1974, the 1975-1976 performance could have been catastrophic.

With the backlog down from 5.1 years at the end of 1974 to approximately 2.4 years at mid-1976, the yards have turned to the government for relief. In 1976 Swedish shipyards delivered 5 million dwt and received orders for 119,000 dwt. The following measures were put forth at that time to assist the yards.

- *The government agreed to guarantee credits covering 70 percent of the cost of newbuildings to be built on speculation. Yards pay a fee of 1 percent for the guarantee and must arrange loans for the remaining 30 percent of the cost themselves. The yards also take full risk for the ships built for stock and it is anticipated that the ships will be sold during or immediately after construction rather than held and chartered out by the yards.*

- *In return for the guaranteed credits, the government required the yards to reduce their capacity. Originally, the yards were expected to reduce their labor force by 30 percent. By the end of 1976, the government indicated that a 50 percent reduction by 1978 might be necessary.*

  Employment related to shipbuilding, shiprepairing and marine engineering at Swedish yards fell to 27,300 in 1975 after rising from 24,500 in 1970 to 29,900 in 1974. Thus, the 30 percent reduction envisioned by the government program means that about 8,000 shipyard employees will be displaced. A 50 percent reduction would mean almost 14,000 displaced employees.

- *Under the building for stock program, Gotaverken decided to produce 16 vessels which are expected to be bulk carriers in the 40,000-60,000 dwt range and possibly some smaller product carriers. Unofficial estimates place the value of these speculative vessel orders at about $485 million. Solvesborg is believed to be building 4 small cargo ships for stock.*

The building-for-stock program must be viewed as primarily a short-term measure to ease the transition to a smaller shipbuilding industry and is an extension of the Swedish government guarantees used in financing the yards' credits. The bill provides for extension of the current guarantee program from $1.07 billion to

$3.25 billion and an additional $867 million in guarantees to be applied to the program of building vessels for stock. These credit guarantees became more important in 1976 since lending institutions were increasingly reluctant to finance new vessels in the current market conditions for shipping.

In addition to the Swedish government's programs to aid the shipbuilding industry, the creation of Norway's Guarantee Institute for Ships and Drilling Vessels by the Norwegian government in 1975 is expected to be a great benefit to Swedish shipyards since Norwegian owners represented approximately 32 percent of the orders on the Swedish yards' orderbook at the end of 1975. Scheduled payments by Norwegian owners to Swedish yards for 1976 and beyond are approximately $1.2 billion for ships already delivered or still on order. The Norwegian Guarantee Institute provides loans or guarantees to Norwegian owners to enable them among other things to meet commitments on vessels during the current depressed conditions in the shipping markets.

Finally, in the spring of 1977, the government studies on shipping and shipbuilding were completed and additional elements of the government program approved. The conclusions of the study provided the foundation for government take-over of what had been the world's second largest shipbuilding industry.

In March 1977, the Swedish government proposed a special program to encourage Swedish shipowners to order from Swedish shipyards. The plan involves 12-year State credit guarantees and 5-year "depreciating loans." The guarantees would cover 70 percent of the contract price of vessels ordered between July 1, 1977 and June 30, 1978 for delivery before July 1, 1980. The guarantees would have a limit of $505.8 million.

The loans would run with no interest or amortization for 5 years and correspond to 30 percent of the contract price. The term "depreciating loan" refers to the fact that if the value of the ship rises during the period, half of the increase in value would be converted to a 7-year loan and the remainder written off by the government. A limit of $216.8 million is proposed as the limit on such loans.

Combining the 70 percent guarantee with the 30 percent loan offers 100 percent financing to Swedish owners. However, despite the owners' requests for credit guarantees, the government studies have apparently found few significant liquidity problems. Swedish owners in a strong liquidity position seem to prefer their independence and would rather the subsidies be given directly to the yards. If the guarantee program is combined with the potential writedown of all of the loans, the government cost of this program can be estimated at approximately $50 million per year.

The report also recommended the formation of a State Shipyards Companies Group which came into existence in mid-1977. The proposed capital contribution of the State to this entity is $192.7 million, plus an additional $36.1 million for investments in Gotaverken Cityvarvet and the creation of a special development fund. Only the Kockums shipyard remains outside the State shipyard group.

The proposal further increased the guarantees on building for stock from $867 million to $1,372.8 million, and included a further provision to extend the guarantees beyond the construction period for post delivery financing up to $481.7 million.

A direct aid in the form of a value guarantee program of $578.0 million to cover potential losses on the sale of vessels built for stock has also been established. Of this amount, $361.25 million is to cover vessels built for stock before 1979 and $216.75 million for vessels before 1980.

Over and above the proposed measures are the funds for $278.8 million to cover Eriksberg losses and $156.5 million for Gotaverken's losses. The direct aid on the loss coverage and stock program aggregates to $963.3 million dollars, not including the potential writedowns of shipowner loans of $216.8 million. The guarantee program now includes $3.25 billion in the original guarantee program, $1.37 billion in the stock program and a possible continuation of $481.7 million of post delivery guarantees, which totals over $5.1 billion without the $505.8 million in guarantees to shipowners.

Thus, the most recent program to salvage the industry aggregates to $5.6 billion in guarantees, a potential $1.2 billion in direct aid or writedowns, and $229 million in equity and capital contributions. The overall exposure of the government and the direct aid and capital contributions represent several years worth of output by the industry at the high 1975 levels.

VI. THE MARITIME AIDS OF WEST GERMANY

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VI. THE MARITIME AIDS OF WEST GERMANY

A. SUMMARY

1. Background

The West German national fleet is one of the most modern in the world, having taken deliveries equal to about 45 percent of the output of the large West German shipbuilding industry between 1970 and 1974. In 1975, deliveries to the West German national fleet declined significantly while the output of the shipbuilding industry continued to increase as shown in Exhibit VI-1. Between 1970 and 1975, the West German shipbuilding industry delivered almost twice the total GRT delivered to the national fleet.

The shipbuilding industry has expanded steadily while the national fleet has taken deliveries at variable levels and applied those deliveries to replacement rather than growth. On a world basis, the West German shipbuilding industry has maintained its third rank over the period while the national fleet has dropped from 8th to 11th on a deadweight basis.

Because the high replacement rate absorbed much of the new tonnage delivered to the West German fleet, the fleet's share of world deadweight tonnage decreased steadily from 3.6 percent in 1970 to 2.4 percent in 1975. However, the West German fleet is the most modern in the world (Exhibit VI-2). As the German fleet was modernized, its size both relative to the world fleet and in terms of the number of vessels and berths for crews, declined. As German exports increased, the share conveyed by the German fleet also declined reflecting the inability of fewer highly efficient vessels to increase cargo share carried.

Exhibit VI-1

SUMMARY OF NATIONAL FLAG FLEET AND SHIPBUILDING ACTIVITY
1970-1975

WEST GERMANY

	1970	1971	1972	1973	1974	1975
Total Deliveries - West German Shipyards						
Vessels	105	115	85	66	58	73
DWT (000)	2,205	3,043	1,764	2,613	3,877	4,140
GRT (000)	1,318	1,794	1,397	1,745	2,050	2,181
Deliveries for W. German Registry from W. German Shipyards						
Vessels	76	74	39	26	22	10
DWT (000)	1,051	1,275	544	948	2,410	686
GRT (000)	673	794	447	566	1,252	361
Deliveries for W. German Registry from World Shipyards						
Vessels	113	118	89	38	31	15
DWT (000)	1,975	1,769	1,034	1,154	2,481	808
GRT (000)	1,201	1,139	802	700	1,303	438
W. German Owners Share of W. German Shipyard Deliveries (Percent)						
Vessels	72	64	46	39	38	14
DWT (000)	48	42	31	36	62	17
GRT (000)	51	44	32	32	61	17
W. German Shipyards Share of Deliveries to W. German Owners (Percent)						
Vessels	67	63	44	68	71	67
DWT (000)	53	72	53	82	97	85
GRT (000)	56	70	56	81	96	82

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

Exhibit VI-2

WEST GERMAN FLEET

SHARE OF WORLD FLEET AND AVERAGE AGE
1966-1975

	1966	1968	1970	1972	1974	1975
Vessels Registered Under German Flag Percent of World Fleet						
Total Fleet[1]	4.7	4.7	5.0	3.8	3.0	2.7
Tankers	1.4	1.4	1.4	1.5	1.6	1.6
Bulk Carriers	3.3	3.1	3.1	2.2	1.9	1.8
Freighters	6.2	6.5	7.0	5.3	4.0	3.5
Deadweight Tonnage Registered Under German Flag Percent of World Fleet						
Total Fleet[1]	3.3	3.4	3.6	2.9	2.7	2.4
Tankers	1.7	1.9	1.9	1.7	2.1	1.9
Bulk Carriers	3.9	3.5	3.7	3.0	2.8	2.7
Freighters	5.0	5.4	6.3	5.4	4.2	3.8
German Fleet - Average Age of Vessels (Years)						
Total Fleet[1]	11	10	9	6	7	7
Tankers	10	8	7	6	6	6
Bulk Carriers	9	8	8	6	5	6
Freighters	11	10	9	6	7	8
World Fleet - Average Age of Vessels (Years)						
Total Fleet[1]	17	13	13	12	12	12
Tankers	11	11	11	11	11	11
Bulk Carriers	11	9	8	8	9	9
Freighters	16	15	13	13	13	13

[1] Includes Combination Passenger/Cargo not shown separately.

Source: Merchant Fleets of the World, Maritime Administration,
U.S. Department of Commerce.

2. Conclusions

West Germany has employed a range of assistance programs to support both the shipbuilding industry and the national fleet. The most significant programs have been the credit assistance programs to the shipbuilding industry. Since 1961 West Germany has defined and implemented eight shipbuilding programs which have continually increased in magnitude. The credit assistance has taken the form of low interest loans and interest subsidies. The benefits of these programs have exceeded the direct benefits of the programs available to the national fleet, except for the years during which special funding of VLCC construction grants significantly increased the level of assistance to the national fleet. This special program aimed at VLCC construction was instituted in 1973 and increased the tanker tonnage of the West German fleet by 74 percent between 1973 and 1975 and contributed to an increase in the West German fleet's share of petroleum import transport.

Since a high proportion of the deliveries to the national fleet have been delivered from domestic shipyard and since the national fleet has until recently absorbed 45 percent of the output of the shipbuilding industry, much of the direct aid to ship owners has been channeled to the shipbuilding industry as well.

The national fleet has benefited from both direct construction grants and indirect tax allowances. The constructions for the national fleet have been primarily directed to modernization of the fleet. The modern replacement tonnage for oceangoing, short sea and inland service required by the national fleet led the shipbuilding industry to diversify its products rather than expand its capacity. This diversification has been beneficial to the industry subsequent to the slump in tanker demand although the domestic industry was less competitive for national fleet orders for large vessels and generally forwent the high profits realized by many process-oriented large bulk vessel builders in the boom years of tanker construction.

B. AIDS TO THE WEST GERMAN NATIONAL FLEET

1. Aid Programs

The German aids to the national-flag fleet are primarily oriented toward the goals of modernizing the fleet to increase its competitiveness in international trade and of expanding the fleet's share of key energy shipments and strong German export trade. Both direct and indirect aids have been employed to achieve these goals during the 1970-1975 period. Exhibit VI-3 summarizes German aids to the fleet.

Both types of aids have features restricting their application of new constructions or purchases of new vessels. The direct aids, e.g., the construction subsidy, specify in addition that different rates apply to different segments of the fleet. This feature directs their application to the goal of improving the German flag share of specific sectors of the German foreign trade. The indirect aids, on the other hand, are less specialized with regard to improving specific fleet sectors and are generally structured only toward the goal of modernizing the overall fleet. The special depreciation encourages more rapid replacement of vessels, and the reserve fund for capital gains from the sale of ships encourages owners to reinvest gains in the shipping industry. The capital gains reserve and a five year carry-forward provision for losses allow for the cyclical nature of shipping and also serve to encourage owners to invest in shipping by offsetting some of the cyclicality risks with tax benefits.

The remainder of this section discusses in detail the assistance programs which were in effect over the 1970-1975 period. Section B.2. addresses the effectiveness of the assistance programs, and Section B.3. discusses recent and prospective aid programs for the West German national fleet.

Exhibit VI-3

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE WEST GERMAN NATIONAL FLEET

1970-1975

i. Investment Financing Assistance

  Program 1 - ERP Loans to Shipowners

ii. Credit Assistance

iii. Tax Allowances

  Program 2 - Special Depreciation
  Program 3 - Tax Deferral on Gains of Ship Sales
  Program 4 - Tax Rate on Foreign Earnings

iv. Direct Subsidies

  Program 5 - Construction Subsidies
  Program 6 - Special Tanker Construction Subsidy

v. Preference Programs

  Program 7 - Cabotage Restrictions
  Program 8 - Cargo Pooling

vi. Government Ownership

vii. Other

a. Principal Aids to the West German National Fleet

(i) Investment Financing Assistance

Program 1 - ERP Loans to Shipowners

Although significant financing/credit assistance is provided to ship exports, the financing programs for shipowners have been very minor. As noted the principal assistance to German shipowners has been through direct subsidies and tax allowances.

Small volumes of loans to German shipowners have been made available from the European Recovery Program funds, an extension of the Marshall Plan for reconstruction of European industry. The funds from this program are external to the government budget, but although the loans are made from funds generated from repayments of previous obligations, they nonetheless represent a cost to the government if one imputes an opportunity cost for lending the funds at less than market rates.

Exhibit VI-4 summarizes the budgeted amounts and terms of the ERP funds made available to shipowners. As can be observed, the amounts are minimal, ranging between $9 million and $18 million annually over the period. With a limit of $2.4 million per loan, the program supports only a few small vessels per year.[1] These funds cannot be combined with investment grants.

Combining the longer term of the ERP loans, the two year grace and lower interest rates yields a benefit of about 15 percent of the value of the loans provided. Based on this estimate, the benefit of the program to West German shipowners was between $1.5 million and $2.8 million per year over the study period.

(ii) Credit Assistance

Credit assistance is not applicable to national flag operators.

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[1] *Dollar values in this chapter have been converted at the 1975 exchange rate of 2.4605 German marks to the dollar.*

Exhibit VI-4

ERP FINANCING ASSISTANCE TO SHIPOWNERS

(1971-1976)

	1971	1972	1973	1974	1975	1976
Authorized ERP Loans ($ millions)	9.8	9.8	18.3	18.3	18.3	18.3
Percent Financing	70%	70%	70%	70%	70%	70%
Interest Rate	6%	6%	6.5%	7.5%	7.5%	7.5%
Term	12 Years 2 Grace	12 Years 2 Grace	12 Years 2 Grace	12 Years 2 Grace	12 Years 2 Grace	12 Years 2 Grace

Source: Interviews

(iii) Tax Allowance Programs

Program 2 - Special Depreciation

A special depreciation allowance may be taken by German owners on new constructions or purchases of vessels (new vessels only). The special depreciation may be used in the first five years of the vessel's life including the year of construction or purchase, and the cumulative amount of special depreciation was originally up to 30 percent of acquisition cost. This special depreciation is in addition to regular depreciation and may only be used if the ship is being depreciated under the straight line method.

After five years, the remaining value of the ship is depreciated in a straight line over the vessel's remaining useful life. Vessels that use this special depreciation may not be sold within eight years of construction or purchase.

The special depreciation percentage was raised from 30 percent of the vessel's cost for 1971-1974 to 40 percent for vessels constructed or purchased from 1975 to 1978 and can now be taken in the first year and the remaining value must then be depreciated over the useful life of the vessel.

The special depreciation on ships ordered from 1971 onward cannot generate a loss for the owner unless the owner has provided a minimum of 30 percent of the equity for a vessel. In that case, losses up to 15 percent of the value of a vessel are permitted with the use of special depreciation.

Exhibit VI-5 illustrates the effect of the special depreciation allowance against ordinary straight line depreciation and against the maximum declining balance alternative.

Exhibit VI-5

PERCENT OF ASSET VALUE DEPRECIATED IN EACH YEAR UNDER SPECIAL DEPRECIATION PROGRAM

Year of Construction or Purchase	Depreciation Schedule	1	2	3	4	5	6	7	8	Sum After 8 Years
1971-74	Straight-Line[1]	8.33	8.33	8.33	8.33	8.33	8.33	8.33	8.33	66.64
	Straight-Line Plus Special Deprec.[1]	14.33	14.33	14.33	14.33	14.33	4.05	4.05	4.05	83.80
	Declining Balance (200% of St. Line)	16.67	13.89	11.57	9.65	8.04	6.70	5.58	4.65	76.75
1975-78	Straight-Line Plus Special Deprec.	16.33	16.33	16.33	16.33	16.33	2.62	2.62	2.62	89.51

---

[1] In 1971-72, Straight-line percentage for dry-cargo ships was 7.14%/year. Tankers, refrigerated freighters, special containerships, and LASH vessels were 8.33%/year. For deliveries in 1973 and 1974, the 8.33%/year applies to dry-cargo ships as well.

The schedule illustrated shows the effect of special depreciation that begins with the delivery of the vessel. In practice, the special depreciation can be applied against down payments and progress payments of ships under construction and can all be taken in the first year, giving the investor a further advancement in the timing of the depreciation shield available from this provision of the law, and providing cash flow for the down payment.

The depreciation shelter has been available to individual investors in Germany. The individuals can receive substantial tax savings in this manner, and the vessels are chartered to German ship operators, who would receive a portion of the benefit. This provides a source of additional capital for West German ship operators. The construction grants are not made available to such ship owners, however, being generally restricted to German ship operators.

The after tax value of the accelerated depreciation is approximately equal to 4.4 percent of the value of the investment compared to straight line at an 8 percent cost of capital and a 50 percent tax rate. In the three years between 1973 and 1975 the value of deliveries from German shipyards to the national fleet were $578, $827, and $532 million, respectively. Averaging the total value of deliveries to the fleet by year, an annual value of deliveries of $727.8 million can be estimated. At 4.4 percent, the potential tax benefit of the accelerated depreciation is estimated at $32.0 million. This calculation does not adjust this benefit for the deduction in the depreciation base that results from capital gains on the sale of ships. This program is treated in the following section. A 50 percent tax rate has been assumed, this rate approximating actual German corporate taxation. Because the lower tax rate on foreign earnings reduces the effective tax rate and the value of any tax shield simultaneously, this calculation does reflect the effects of this lower tax rate as well.

The effect of the increased special depreciation to 40 percent, all taken in the first year beginning in 1975, would increase the current value of the accelerated depreciation shield by 36 percent. The ability to take a portion of the depreciation prior to deliveries further increases the value of the program.

Program 3 - Tax Deferral on Gains from Ship Sales

Capital gains from the sale of vessels may be deposited in a special fund that permits the taxpayer to defer the tax liability on the gain for two years. If the amounts in the fund are used toward a new construction or major reconstruction with the two years, the tax liability is eliminated but the basis value of the new asset must be reduced by the amount used from the special fund. The government thus recoups the tax over the life of the vessel due to the reduction in the depreciation shield available to the owner. The timing difference in the payment of the taxes, however, provides a substantial benefit to the owner.

If the new vessel being purchased is under construction at the end of the two year period mentioned above, the tax-deferred period is extended to four years. The use of these capital gains reserve funds is limited to vessels that were owned by shipping companies for six years prior to their sale.

Program 4 - Tax Rate on Foreign Earnings

The corporate tax rate on revenues earned abroad was three-fourths[2] the normal tax rate of 50 percent through 1973 and 60[3] percent of the normal tax rate beginning in 1974.

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[2] *Based on 50 percent of earnings at 1/2 the normal rate.*

[3] *Based on 80 percent of earnings at 1/2 the normal rate.*

(iv) Direct Subsidies

Program 5 - Construction Subsidy

Construction subsidy may be paid to German owners ordering ships either in German or foreign shipyards. The subsidy covered 10 percent of the cost of the vessel from 1965 to 1974, 12.5 percent in 1975, and for the first time in 1976 could be combined with other aid programs (e.g., interest subsidies), to cover up to 17 percent of the cost of the vessel. The total amount covered would be a function of the interest subsidy level, which currently varies with prevailing interest rates. A recapture provision requires that the subsidy must be repaid to the government in full if the ship is sold within six years of being subsidized. The recapture amount declines 20 percent each year thereafter and is payable at the closing of the ship sale.

These subsidies are available only up to the maximum amount allocated by the government each year. The total amount of construction subsidy available has been fixed under the authorization for each shipbuilding program. Exhibit VI-6 summarizes the subsidies authorized for German owners under the construction subsidy program over the period 1971-1977.

Recent interest rates have essentially negated the effects of interest subsidy. The government raised the construction grant level to 17.5 percent and increased the budgeted 1977 level for construction subsidies from $73.1 million to $89.4 million.

Program 6 - Special Tanker Construction Subsidy

A special construction subsidy program of up to 15 percent of a vessel's cost was initiated in 1974 for German owners ordering VLCCs as part of the previously described program. The program provided for repayment of the subsidy to the government if the ship is sold within 12 years. This program was directed toward improving the German flag share of Germany's petroleum imports. Initially the program was to be limited to domestic corporations, but in part was utilized by subsidiaries of overseas companies.

Exhibit VI-6

CONSTRUCTION SUBSIDY APPROVALS BY YEARS 1971-1977

Year	Amount ($ millions)	Number of Ships	GRT (thousands)
1971	22.0	28	300
1972	40.2	22	800
1973	40.2	37	583
1974	48.8	43	409
1975	48.3	28	228
1976	69.1	67	285
1977	89.4	NA	NA

NOTE: Excludes VLCC construction subsidy program funding. (see Program 6)

Source: Interviews

For 1973, 1974 and 1975 the budgeted VLCC construction subsidies were $61.0 million per year. However, the 1975 budgeted volumes were only minimally utilized due to low demand for tankers. The program was cancelled in 1976.

(v) Preferences

Program 7 - Cabotage Restrictions

Cabotage trade is restricted to German flag vessels. Foreign-flag vessels are permitted if German flag vessels are not available or if the rates for German flag vessels are substantially higher than those for the available foreign-flag vessels.

Program 8 - Cargo Pooling

The German government's approval is required for cargo pooling or revenue pooling agreements that involve non-resident shipping companies. Also, freight contracts and charters with carriers from countries that exclude German ships from free competition must be approved by the government.

(vi) Government Ownership

None

(vii) Other

None

b. Benefits of West German Assistance Programs to the National Fleet

Exhibit VI-7 summarizes the benefits of the West German assistance programs for shipowners. The principal aid programs have been the construction subsidies, which were increased temporarily to about

Exhibit VI-7

SUMMARY OF BENEFITS OF WEST GERMAN ASSISTANCE PROGRAMS TO THE NATIONAL FLEET

1971-1975

(millions of dollars)

		1971	1972	1973	1974	1975
Program 1: ERP Loans		1.5	1.5	2.8	2.8	2.8
Program 2: Special Depreciation						
Program 3: Tax Deferral on Ship Sales	[a]	32.0	32.0	32.0	32.0	32.0
Program 4: Tax Rate on Foreign Earnings						
Program 5: Construction Subsidy		22.0	40.2	40.2	48.8	48.3
Program 6: Tanker Subsidy				61.0	61.0	[b]
Subtotal		55.5	73.7	136.0	144.6	83.1

[a] The value of tax allowance programs have been estimated on the basis of the accelerated depreciation shield.

[b] Tanker subsidies of $61 million were funded but not utilized.

$100 million per year during 1973 and 1974, with funding levels of $61 million per year for a special VLCC tanker program. Similar appropriations were made for 1975 but were not utilized.

Tax allowances provided an estimated benefit of $32 million per year, bringing the total assistance up to levels ranging from $56 million in 1971 to a peak of $144.6 million in 1974.

2. Effectiveness of Aids to the West German National Fleet

The construction subsidies and ERP loans to German shipowners for acquiring vessels are parts of the government shipbuilding programs that assist both German shipyards and German vessel owners. The programs were begun in 1961 as aids to the shipyards for refinancing export credits and were expanded in 1965 to include construction subsidies for German owners and European Recovery Program (ERP) loans to German owners. The expansion of the programs in 1965 also included interest subsidies on commercial loans to shipyards and inexpensive ERP loans to shipyards. Both of these forms of aid were intended to reduce the cost to German yards for refinancing export credits.

The direct and indirect aid programs aimed at modernizing the fleet were very successful in achieving their goal. Construction subsidies to owners under the "principles for promotion of the German Merchant Marine" (Federal Register No. 94, May 20, 1965) and other programs in effect in the late 1960s had given Germany a very modern freighter fleet whose average age of nine years in 1970 was bettered only by Japan's seven year average age for its frieghter fleet.

At the end of 1970, Germany had 188 freighters of 1.57 million dwt on order. This was equivalent to 27 percent of its existing fleet in terms of dwt and exceeded by a considerable margin the rate of new freighter tonnage on order in the world which was 15 percent of the existing fleet at the end of 1970. By 1972, these developments caused the average age of the German freighter fleet to drop to six years, less than half that of the world's freighter fleet, and moved the German fleet past Japan's as the most modern in the world.

The other sectors of the fleet were also active in acquiring new vessels in 1970 but not at the same rate as the freighter sector. Total German deadweight tonnage on order as a percentage of the existing fleet in 1970 (31 percent) was just slightly higher than the world's percentage on order that year (26 percent).

By 1972, the German fleet had an average age of six years, sharing first place with Japan's fleet as the world's most modern. This rank for the German fleet was maintained through the remainder of the 1970-1975 period (Exhibit VI-8).

The VLCC program appears to have been partially successful. Orders outstanding at year-end for tankers to be registered under the German flag jumped to 4.0 million dwt in 1973, the first year of the program, from the 1.6 million to 1.9 million that had been on order at the end of each of the three previous years. Deliveries to the fleet totaled 2.7 million dwt in 1974 and 1975 after deliveries in the preceding four years had totaled 1.4 million dwt. The tonnage of the tanker fleet increased from 3.2 million dwt at the end of 1973 to 5.6 million dwt at the end of 1975, increasing its share of the world tanker tonnage from 1.46 percent to 1.86 percent and carrying 12.7 percent of Germany's oil imports in 1975 compared to 5.4 percent in 1973 (Table VI-1). Low demand for the program in 1975 due to tanker overcapacity led to its cancellation in 1976.

Exhibit VI-8

AVERAGE AGE OF THE FLEET
W. GERMANY AND WORLD
1966-1975

	1966	1968	1970	1972	1974	1975
World Fleet						
Total Fleet	17	13	13	12	12	12
Freighters	16	15	13	13	13	13
Bulk Carriers	11	9	8	8	9	9
Tankers	11	11	11	11	11	11
W. German Fleet						
Total Fleet	11	10	9	6	7	7
Freighters	11	10	9	6	7	8
Bulk Carriers	9	8	8	6	5	6
Tankers	10	8	7	6	6	6

Source: Statistical Analysis of the World's Merchant Fleet,
Maritime Administration, U.S. Department of Commerce, 1966-1975.

Table VI-1
GERMAN FLAG SHARE OF CRUDE OIL IMPORTS THROUGH GERMAN PORTS

1973-1975

Year	Total Crude Oil Imports (tons in mil.)	Crude Oil Imports on German-flag Vessels (tons in mil.)	German-flag Share (%)
1973	43.76	2.38	5.4
1974	47.34	3.70	7.8
1975	37.26	4.75	12.7

Source: Interviews

As Exhibit VI-9 shows, deliveries to the German fleet were equivalent to 62 percent of the total fleet's 1970 deadweight tonnage compared to 78 percent for the world fleet. The uses for the new fleet additions were significantly different for Germany than for the world, however, with fleet modernization absorbing a much higher percentage of new deliveries in Germany and net fleet growth absorbing a lower percentage. This was especially pronounced in the bulk carrier and freighter sectors of the fleet. Exhibits VI-10 and VI-11 summarize other figures on fleet performance during the study period.

While deadweight tonnage of the world fleet grew 70.2 percent from 1970 to 1975, Germany's fleet grew only 15 percent. The average age of the world fleet, however, declined only from 13 years to 12 years while the German fleet's age declined from the already modern nine years in 1970 to seven years in 1975. The tanker sector of the German fleet experienced substantial growth in addition to declining in average age from seven years to six.

3. Recent and Prospective Programs

The construction subsidy program contemplates construction subsidies to German owners in the order of $90 million during 1977. While the construction subsidies have been available to owners for having vessels constructed in either German or foreign yards,

Exhibit VI-9

COMPARISON OF FLEET GROWTH - W. GERMANY AND WORLD
1970-1975
(deadweight tons in millions)

GROWTH IN REGISTERED FLEET

	West Germany			World		
	Deadweight Tons		Percent	Deadweight Tons		Percent
	1970	1975	Change	1970	1975	Change
Total Fleet	11.7	13.5	15.0	27.0	556.6	70.2
Tankers	3.0	5.6	90.4	153.1	302.2	97.4
Bulk Carriers	2.9	4.0	39.7	77.2	150.1	94.5
Freighters	5.9	3.8	(33.7)	92.4	101.2	9.6

NEWBUILDING DELIVERIES TO THE FLEET

	West Germany		World	
	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT
Total Fleet	7.25	62%	254.8	78%
Tankers	3.27	111%	157.1	103%
Bulk Carriers	2.18	74%	73.5	95%
Freighters	1.80	31%	24.0	26%

SHARE OF NEWBUILDING DELIVERIES USED FOR NET FLEET GROWTH AND FOR VESSEL REPLACEMENT

	West Germany		World	
	Percent for Net Fleet Growth	Percent for Vessel Replacement	Percent for Net Fleet Growth	Percent for Vessel Replacement
Total Fleet	24%	76%	90%	10%
Tankers	82%	18%	95%	5%
Bulk Carriers	52%	48%	99%	1%
Freighters	0%	100%*	37%	63%

*Of the 5.85 million dwt in the West German freighter fleet at the end of 1970, 3.85 million dwt were deleted from the fleet through scrapping, sale, or transfer to other flags. Of these deletions, 1.80 million dwt were replaced with new deliveries.

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

Exhibit VI-10

NATIONAL FLAG SHARE OF GERMAN FOREIGN TRADE BY VESSEL

(tons in millions)

	Imports			Exports		
	Total Tons	Tons on German-flag Vessels	German-flag Share	Total Tons	Tons on German-flag Vessels	German-flag Share
1970	109.3	27.4	25	25.6	10.0	39
1971	105.0	24.3	23	24.4	9.1	37
1972	102.0	21.9	21	22.5	7.5	34
1973	110.0	18.3	17	27.8	7.9	28
1974	115.1	17.0	15	35.5	8.9	25
1975	99.8	18.4	18	28.0	7.7	27

Source: Institut fur Seeverkehrswirtshaft Bremen.

Exhibit VI-11

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY
FLEET OPERATIONS

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: West Germany

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
	Fleet Size Registered, Fleet Growth[b]							
Total Ships[a]	- Number	993	958	797	702	668	611	-9.3
	DWT	11,697	12,545	11,536	11,417	13,616	13,453	2.8
	GRT	7,761	8,207	7,612	7,455	8,494	8,347	1.5
Tankers	- Number	59	69	70	70	84	83	7.1
	DWT	2,956	3,457	3,184	3,228	5,568	5,627	13.7
	GRT	1,681	1,926	1,781	1,786	2,981	3,005	12.3
Bulk Carriers	- Number	92	87	78	75	77	79	-3.0
	DWT	2,859	3,271	3,277	3,675	3,876	3,993	6.9
	GRT	1,774	1,972	1,945	2,153	2,259	2,321	5.5
Freighters	- Number	836	795	643	552	503	445	-11.8
	DWT	5,854	5,784	5,050	4,497	4,161	3,822	-8.2
	GRT	4,189	4,188	3,797	3,453	3,216	2,983	-6.6
	Deliveries to the Fleet[c] (where intended registry is known)							
Total Ships[a]	- Number	113	118	89	38	31	15	-33.2
	DWT	1,975	1,769	1,034	1,154	2,481	808	-16.4
	GRT	1,201	1,139	802	700	1,303	438	-18.3
Tankers	- Number	13	14	9	7	16	6	-14.3
	DWT	818	216	81	257	2,132	579	-6.7
	GRT	424	124	49	134	1,094	301	-6.6
Bulk Carriers	- Number	7	10	9	10	5	4	-10.6
	DWT	367	764	287	675	262	190	-12.3
	GRT	214	426	168	384	149	108	-12.8
Freighters	- Number	93	94	71	21	10	5	-44.3
	DWT	790	789	666	222	87	39	-45.2
	GRT	563	589	585	182	61	29	-44.7
	Vessels on Order at Year-End[c] (where intended registry is known)							
Total Ships[a]	- Number	246	194	91	68	37	117	-13.8
	DWT	4,798	4,096	3,580	5,191	2,671	2,644	-11.2
	GRT					1,792	1,795	NA
Tankers	- Number	32	34	21	27	14	16	-12.9
	DWT	1,564	1,571	1,907	4,047	2,012	1,376	-2.5
	GRT					1,345	899	NA
Bulk Carriers	- Number	26	25	22	18	11	14	-11.6
	DWT	1,664	1,324	1,183	947	516	442	-23.3
	GRT					346	284	-
Freighters	- Number	188	135	48	23	12	87	-14.3
	DWT	1,570	1,201	490	197	143	825	-12.1
	GRT					101	611	NA

Exhibit VI-11
Fleet Operations (continued)
Country: West Germany

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
	Share of National Trade (percent)[e]						
Imports	25	23	21	17	15	18	-6.4
Exports	39	37	34	28	25	27	-7.1
	Reported Financial Results (millions of dollars)						
Revenues	2,038	2,160	1,906	2,007	2,659	2,778	6.4
Profits	n/a						
Outstanding Debt	n/a						
	Employment[d]						
Nationals	37,782	34,394	29,375	26,831	24,869	24,756	-8.1
Total	49,085	45,981	39,315	34,996	31,914	31,962	-8.2

[a] Includes Combination Passenger/Cargo Vessels not shown separately.

[b] Source: Merchant Fleets of the World, Maritime Administration, U.S. Dept. of Commerce, semi-annual.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, semi-annual.

[d] Source: Maritime Transport, Organization for Economic Cooperation and Development, annual.

[e] Source: Institut fur Seeverkekiswirtschaft Bremen.

the large majority of German owners' orders were placed with domestic yards until recently. In 1974, 71 percent of the ships delivered to German owners came from domestic yards and these accounted for 96 percent of the gross tonnage delivered to the fleet. In 1975, the domestic yards' share of deliveries to German owners dropped to 67 percent of the vessels and 82 percent of the grt, and in the first half of 1976 orders placed in domestic yards accounted for 67 percent of the vessels and 69 percent of the grt. Further erosion of the domestic yards' share of German orders in the second half of 1976 has prompted the German yards to seek from the Bonn government some form of protection against foreign competition. Japan, due to aggressive pricing, has been the major benefactor of the increasing shift to overseas ordering. The declining orderbook in late 1976 has reached crisis proportions for many West European yards, thus increasing the possibility that governments may institute protectionist measures.

Ironically, two actions by the Bonn government that were meant to aid German owners and shipyards may have contributed to the increase in overseas share of German owners' orders. Effective October 1974, the government repealed the Bardepot cash deposit legislation introduced in March 1972 that required the recipient of a foreign loan to deposit 50 percent of the amount exceeding 50,000 DM in a non-interest bearing account in the Central Bank. At the beginning of 1973, the Bardepot deposit requirements were lowered from 50 percent to 20 percent.

The effect of the deposit requirement was that German shipowners and German shipyards had to finance an increased share of their requirements in the domestic capital market where interest rates were high compared to alternative foreign sources of financing. This, according to the Association of German Shipbuilders, had a detrimental effect on investments by the German shipping industry and led to a decline in investments. Moreover, since interest rate differentials between Germany and abroad had substantially narrowed by 1974, the repeal of the Bardepot legislation was not expected to lead to a substantial increase in investments. Bardepot balances in the Central Bank at the end of each year in the 1970-1975 period were as shown in Exhibit VI-12.

Shipowners attempted to have financing of new ships built in foreign shipyards exempt from the deposit requirement provided that the term of the foreign financing for the vessel did not exceed eight years and that a down payment of at least 20 percent of the vessel's cost was applied. However, by establishing companies in an overseas country, investments without the required deposits were possible.

With the repeal of the Bardepot legislation, the shipping industry benefited from the release of working capital that had previously been tied up in required deposits. Simultaneously, however, the government's action removed an impediment to the use of supplier credits offered by foreign shipyards, thus enabling the foreign yards to compete more effectively with any domestic yards that use domestic sources of credit.

The second government aid contributing to the increase in overseas orders by German owners was the 7.5 percent Industrial Investment Grant introduced in January 1975. Although intended for German owners ordering ships from German shipyards for German-flag registry, the legislation contained some loopholes that enabled German owners to use the grants for orders placed abroad. The investment grant could be used in conjunction with the construction subsidies. The Association of German Shipbuilders estimated that vessels worth approximately $480 million were ordered from foreign shipyards by German owners using the Investment Grant. This order volume would involve about $38 million in subsidies from the Investment Grant.

The Industrial Investment Grant program was replaced in late 1976 with a combination interest subsidy-construction grant program. The maximum 2 percent interest subsidies to the yards are to be passed on

Exhibit VI-12

BARDEPOT BALANCES

1972-1975

Year	Bardepot Balance ($ millions)
1972	$417
1973	$ 92
1974	$ 54
1975	$ 98

Source: Institut fur Seeverkekrswirtschaft Bremen.

to owners ordering ships in West German yards for West German registry. Previously, the construction grant and interest subsidy could not both be applied to a ship. The value of the maximum 2 percent interest subsidy over the life of a seven year loan for 70 percent of a contract's value amounts to an equivalent 4.3 percent of a ship's cost. Thus, the interest subsidy plus the construction grant of 12.5 percent could produce a benefit of approximately 17 percent of a ship's cost under the maximum conditions of the program.

The large and well developed German capital markets reflect fluctuations in world interest rates despite Bundesbank efforts to adjust the rate level in response to domestic needs for economic stimulus or stabilization. Despite the size of the German capital markets, borrowing is directed at large corporations and public enterprises causing small and medium-sized companies to pay substantial interest rate differentials, often 4 or 5 percentage points above the prime lending rate which has fluctuated between 6.97 and 12.59 percent between 1970 and 1976.

As a result, the 2 percent interest subsidy brings the cost of traditionally more stable long-term government bonds which have fluctuated from 7.87 to 10.58 percent between 1970 and 1976 closer to the rates available to shipyards in other countries under OECD guidelines. However, recent and substantial portfolio losses have resulted in more conservative lending practices at formerly aggressive German financial institutions and should result in continued high rates for ship financing and shipyard financing. This trend will constrain the capital available to these industries.

During 1977, however, with the reduced effect of the interest subsidies due to lower interest rates, the construction grants were raised to 17.5 percent. Such aids are vital due to the losses incurred by owners holding foreign currency reserves. According to the German Shipowners' Association, exchange losses in 1974 caused a serious reduction in the amount of capital available for rationalization and new capital investment.

Germany has a balance of trade surplus but a deficit for invisibles. Shipping is a large portion of Germany's invisible trade deficit as is shipbuilding in recent years.

This deficit is largely the result of German trade policies that have encouraged the use of lowest cost transportation. This policy minimizes the delivered price of German exports to customers, but penalizes the high cost merchant marine which despite modernization operates with high cost vessels and high cost crews that can only compete on developed trade routes on which other developed nations operate. German shipowners recognize the policy of German export industries and frequently call upon industries and freight forwarders to specify German-flag vessels for reasons of national interest.

Cargo preference has gained increased acceptance among West German shipowners in recent years. Despite a traditional free-trade posture in the past, German owners see the effects of the Code of Conduct for Liner Conference as preferable to the damage that could result from prolonged rate-cutting by Eastern Bloc nations intent on securing an increased share of world trade. The German owners also view opposition to the increasing demand for cargo sharing by third-world nations as futile. West Germany, France and Belgium are among the countries that have signed the UNCTAD agreement on cargo preference, but the EEC has considered taking these members before the European Courts of Justice for their action. The jurisdiction of the EEC in this matter has been challenged by the German Shipowners' Assocation, claiming that it falls strictly under shipping policy for which the EEC has no responsibility according to the Treaty of Rome, Article 84, paragraph 2.

Despite the German fleet's participation in cross-trading (approximately 20 percent of revenues), the German attitude toward cargo preference is understandable. If one considers the low German-flag participation in German foreign trade (Exhibit VI-10), the implementation of the UNCTAD agreement would cause realignment of trading patterns and perhaps of fleet composition for German owners but the net effect would likely be a German fleet equal to or larger than the current one.

C. AIDS TO THE WEST GERMAN SHIPBUILDING INDUSTRY

1. Aid Programs

The major objectives of West German aid programs for the shipbuilding industry have been:

- *to enable the yards to compete effectively for export orders by subsidizing the supplier credits that the yards offered to customers;*
- *to make the yards competitive for orders from domestic owners by equalizing the price that they could offer domestic owners with prices paid by competitive shipowners in other shipbuilding nations;*
- *to promote efficiency in shipbuilding operations and offset high labor costs by subsidizing modernization programs; and*
- *to promote industrial activity and provide employment in certain under-developed parts of the country.*

The principal aid programs used to accomplish these objectives are outlined in Exhibit VI-13.

As shown in Exhibit VI-13, West Germany has employed a wide range of assistance programs for the shipbuilding industry, incorporating all major categories of shipbuilding assistance programs except for preferences. The most significant programs have been under the credit assistance category, primarily ERP funds for export credit combined with interest subsidies. Construction grants are the second most significant maritime aid to shipbuilding.

Exhibit VI-13

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE WEST GERMAN SHIPBUILDING INDUSTRY

1970-1975

i. Investment Financing Assistance

- Program 1 - ERP Funds for Yard Modernization
- Program 2 - Eastern Border Loans for Modernization

ii. Credit Assistance

- Program 3 - Interest Subsidies
- Program 4 - ERP Loans for Export Credit
- Program 5 - ERP Loans to West German Owners

iii. Tax Allowance Programs

- Program 6 - Customs Duty Exemptions
- Program 7 - Inventory Loss Reserves
- Program 8 - Investment Tax Credits

iv. Direct Subsidies

- Program 9 - Construction Grants

v. Preference Programs

vi. Government Ownership

- Program 10 - Government Ownership

vii. Other

- Program 11 - Export Credit Insurance
- Program 12 - Research and Development

West Germany has also provided tax allowances and investment financing assistance to the national shipbuilding industry. These programs, however, are smaller than the credit and direct subsidy programs. Finally, small government participation and other assistance programs have been utilized.

These programs are discussed in detail in this Section. Section C.2. addresses the effectiveness of the aid programs, and Section C.3. discusses recent and prospective programs.

a. Principal Aids to the West German Shipbuilding Industry

(i) Investment Financing Assistance

The West German programs for assistance in the financing of shipyard modernization and regional development were primarily employed prior to and only to a limited degree in the early part of the study period. The programs were not large.

Program 1 - ERP Funds for Yard Modernization

Low interest loans to West German shipyards from European Recovery Program funds to finance yard modernization programs have been provided to German shipyards. Loans of this type are not unique to shipbuilding, however. Similar special loans to all geographical regions and to all industries are made available with ERP funds. These loans are intended to assist yards in improving their productivity as discussed under Program 2. Shipyard investments totaling $70 million were made between 1969 and 1973. These investments included funds from the ERP (25 percent), loans from state governments (25 percent), and commercial loans with 3 percent interest subsidies provided by the state (50 percent). The loans have been utilized by even the largest shipbuilding concerns and are quantified in Program 2.

Program 2 - Eastern Border Loans

Special ERP investment loans are also available for yards near the Eastern border with participation from both the federal and state governments. These loans carried an interest rate of 6 percent (5 percent in the case of yards for non-shipbuilding uses) in the late 1960s and early 1970s. The yards had a four year grace period before serving an eight year amortization schedule.

Between 1966 and 1971, $38.2 million (1975 conversion rates) in credits were granted in 37 situations. However, there is only one major shipyard in the Eastern border area, and it is likely the greatest proportion of the funds were utilized in that shipyard development. Since 1971, however, there have been no major investment aids under either the Eastern border on modernization programs.

In estimating the benefit of the modernization loans, an average benefit of 3 percent has been applied to the $108.2 million in loans provided up through 1973. The 3 percent approximates the aggregate benefit of the lower interest rates on the ERP and state modernization loans, the interest subsidy on the commercial loans, and the average benefit of the four year grace period on the ERP Eastern Border loans. In aggregate, the benefit of these modernization loans can be estimated at $3.3 million per year over the study period.

(ii) Credit Assistance

The major West German assistance to the shipbuilding industry over the study period has been the provision of funds for export credit. Funds have been made available from the ERP program at low interest and government funds have been made available to provide interest subsidies.

The total funds for ship export credit are managed by the Kreditanstalt fur Wiederaufbau (KW), a special credit institution responsible to the West German federal government. The KW is an intermediary between the state and private banking and has a wide range of responsibilities including long-term export financing, capital aid for developing countries, and promotion of domestic industry. Ship exporting programs are operated within the overall KW program of export financing.

The first program related to the promotion of shipbuilding and geared to exports was initiated in 1961 and had the objective of putting West German shipyards in a competitive world market position. Seven programs have followed; the current Eighth Program was initiated on May 24, 1974 and covers deliveries between 1976 and 1979. Exhibit VI-14 summarizes the ERP funds, federal funds for interest subsidies, and KW's own funds appropriated for each of the eight programs since 1961.

The KW funds are provided at essentially market rates. Thus, the total program of export credit assistance from 1961 through 1979 deliveries is estimated at DM 1.82 billion of low interest ERP funds and DM 1.20 billion in government funds for interest subsidies. By combining the low interest ERP funds with KW funds and/or other market funds, against which the government interest subsidies are applied, an estimated DM 22.6 billion volume of orders will have received financing assistance through the eight shipbuilding assistance programs.

A recent study entitled Ship Export Financing[4] by Dr. Gunter Wolf estimated the total value of the assistance over the eight programs to be $684.7 million (at 1975 conversion rates). This was the sum of $156.9 million in the value of the low interest rates on the ERP funds (implying between a 2.5 and 3.0 percent interest rate spread from commercial loans); $487.4 million in interest subsidies; and $40.4 million in the value of the KW funds provided (implying a 0.5 percent average interest rate spread on those funds).

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[4] *Schiffs-Export Finanzierung Deutsche Werften im Auf Und Ab Des Weltmartes, Gunter Wolf, 1975.*

Exhibit VI-14

EXPORT CREDIT SHIPBUILDING ASSISTANCE PROGRAMS
1961-Present

-- First Programme --

Initiated: July 24, 1961
Duration: Until funds were used up
Total Commitment Volume: DM200 m. ERP Special Funds
DM 200 m. KW
Order Volume Promoted: DM 697 m.
Allocation of Funds: DM 150 m. for projects in developing countries
DM 250 m. for projects in non-developing countries
Credit Periods: Developing countries-10 years
non-developing countries-8 years
Rate of Interest: 5 percent p.a.

-- Second Programme --

Initiated: January 10, 1963
Duration: Until funds were used up
Total Commitment Volume: DM 75.5 m.
DM 94.5 m.
Order Volume Promoted: DM 334 m.
Allocation of Funds: DM 75 m. for projects in developing countries
DM 95 m. for projects in non-developing countries
Credit Periods: Developing countries-at most 10 years
non-developing countries-8 years
Rate of Interest: 5.5 percent p.a.

-- Third Programme --

Initiated: June 5, 1964
Duration: Until funds were used up
Total Commitment Volume: DM 120 m. ERP Special Fund
DM 170 m. KW
Order Volume Promoted: DM 608 m.
Allocation of Funds: DM 60 m. for projects in developing countries
DM 230 m. for projects in non-developing countries
Credit Periods: 8 years
Rate of Interest: 5.5 percent p.a.

-- Fourth Programme --

Initiated: April 1, 1965
Duration: Until funds were used up
Total Commitment Volume: DM 110 m. ERP Special Fund
DM 155 m. KW
Order Volume Promoted: DM 530 m.
Allocation of Funds: DM 60 m. for projects in developing countries
DM 205 m. for projects in non-developing countries
Credit Periods: 8 to 10 years
Rate of Interest: 5.5 percent p.a.

-- Fifth Programme --

Initiated: February 1, 1966
February 22, 1967-guidelines
Duration: Deliveries 1967-1969
Total Commitment Volume: DM 189 m. ERP Special Fund
DM 110.04 m. Federal Budget
Order Volume Promoted: DM 2,015 m.
Credit Periods: 8 years
Rate of Interest: 5.5 percent p.a.

-- Sixth Programme --

Initiated: VI: July 18, 1968-guidelines
VIa: September 1, 1969
VI E: August 13, 1969
Duration: Deliveries 1970-1972
Total Commitment Volume: DM 225 m. ERP Special Fund
DM 178.6 m. Federal Budget
DM 539 m. KW
Order Volume to be Promoted: DM 3.2 bn.
Credit Periods: 8 years
OECD Rate: May 30, 1969-6 percent p.a.
January 1, 1971-7.5 percent p.a.

-- Seventh Programme --

Initiated: July 1, 1970-guidelines
Duration: Deliveries 1973-1975
Total Commitment Volume: DM 359.6 m. ERP Special Fund
DM 372.2 m. Federal Budget
DM 880.4 m. KW
Order Volume to be Promoted: At least DM 5.4 bn.
Credit Periods: 8 years
OECD Rate: January 1, 1971-7.5 percent p.a.
July 1, 1974-8 percent p.a.

-- Eighth Programme --

Initiated: May 24, 1974-guidelines
Duration: Deliveries 1976-1979
Total Commitment Volume: DM 538.4 m. ERP Special Fund
DM 538.4 m. Federal Budget
DM 1,076.8 m. KW
Order Volume to be Promoted: DM 9.6 bn.
Credit Periods: Depending on OECD terms
Rate of Interest: Minimum OECD terms 7.5/8 percent p.a.
Interest cost reduction at maximum of 2 percent p.a.
Financing Quotas: Determined by yards under their individual credit lines; limits: OECD terms and guidelines

Source: Shiffsexport Finanziering, Deutsche Werften In Auf Und Ab Des Wectmarktes, Dr. Gunther Wolf, Frankfurt, 1975.

Program 3 - Interest Subsidies

Based on Exhibit VI-14, the value to the shipyards of the interest subsidies over the study period can be estimated. Exhibit VI-15 below shows the Program VI, VII and VIII interest subsidy funds distributed over the years of the deliveries of each of the programs. The funds, in fact, would be expended over the period of maturity of the loans.

As discussed above, these subsidies are applied to loans from commercial credit sources that are used to finance the supplier credits offered by yards on export contracts. The subsidy enables the yards to offer cheaper credit terms to export customers, and yards used these cheap credits as competitive tools to secure orders in the 1960s. Since the OECD agreement on Export Credits for Ships came into effect in 1969, the interest rate subsidy has served to bring the terms on credits offered by German yards into line with the OECD terms, and its value as a competitive tool has been diminished. The subsidy nonetheless remains important to German shipyards since it enables them to offer export credits at competitive OECD rates which are generally below the rates at which yards can obtain credit in the capital markets.

Under the Eighth Shipbuilding Assistance Program, the maximum interest rate subsidy is 2 percentage points. This limit means that when the prevailing market rates exceed the OECD minimum by more than two points, the yards must either increase the interest rates on their export credits to customers or absorb the difference themselves. When prevailing market rates fall to within 2 percentage points of the OECD minimum, the interest subsidy is reduced accordingly to cover only the actual differential.

Prior to the OECD agreement, interest subsidies of 2.0 to 2.5 percent were available regardless of rates prevailing in capital markets. This was in line with

Exhibit VI-15

AVERAGE YEARLY PROGRAM VALUES OF INTEREST SUBSIDIES AND LOW INTEREST ERP LOANS FOR DELIVERIES BETWEEN 1970 AND 1979

(millions of dollars)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
ERP Funds to Shipyards for Export Credit	30.5	30.5	30.5	48.7	48.7	48.7	54.7	54.7	54.7	54.7
KW Funds to Shipyards for Export Credit	73.0	73.0	73.0	119.3	119.3	119.3	109.4	109.4	109.4	109.4
Interest Subsidy	24.2	24.2	24.2	50.4	50.4	50.4	54.7	54.7	54.7	54.7
ERP Value[a]	6.7	6.7	6.7	10.6	10.6	10.6	11.9	11.9	11.9	11.9
KW Value[b]	3.0	3.0	3.0	4.9	4.9	4.9	4.5	4.5	4.5	4.5
Total	33.9	33.9	33.9	65.9	65.9	65.9	71.1	71.1	71.1	71.1

[a] Discounted cash flow benefit based on an average 2.5 percent lower interest rate over an average of eight years.

[b] Discounted cash flow benefit based on an average 0.5 percent lower interest rate over an average of eight years.

Source: Exhibit VI-14.

the intended purpose of the program during that period, i.e., to increase the international competitiveness of West German yards by providing cheap credits.

The Eighth Shipbuilding Assistance Program covering deliveries in 1976-1979 also extends the availability of interest subsidies and ERP loans for financing the yards' supplier credits, previously limited to export orders, to cover orders by domestic owners from West German yards.

Program 4 - ERP Loans for Export

Exhibit VI-15 also shows the ERP and KW funds established for the programs covering the years 1970 to 1979. Based on average interest rate spreads as described above for the eight year period of the loans, the present value of the interest rate differential on the loans is shown for each year. As with the interest subsidies, the value of the lower interest rates would be received over the term of the loan. These loans are combined with the interest subsidy program described above to provide yards with financing for their export credits at competitive rates in the international shipbuilding market.

Program 5 - ERP Loans to West German Owners

Low interest loans to West German owners from European Recovery Program funds are described above in the section on aids to the West German national fleet, but since ships financed with ERP loans are required to be ordered from West German shipyards, this aid program provides an important source of business for the West German yards.

(iii) Tax Allowance Programs

Program 6 - Customs Duty Exemptions

Imported material for the building of oceangoing ships is exempt from customs duty, whether the ship is exported or delivered to a domestic owner. Most materials for use in shipbuilding are, in fact, made domestically.

Program 7 - Inventory Loss Reserves

Special reserve funds against inventory losses are permitted under German tax law. These and other reserve funds have not been a major benefit to German shipyards over most of the 1970-1975 period since the yards experienced losses in several years and thus had little need to shelter income with reserves.

As shown in Exhibit VI-16, nine shipbuilding firms increased their statutory reserves by approximately $10 million (24.7 million DM) in 1974. Other than another $10 million increase posted by HDW in 1972, reserve fund transactions by West German shipyards have been minor during the 1970-1974 period.

The benefit to the yards from deposits to these reserves is the difference in the timing of tax liability that yards gain by making deposits to the reserve funds. (Example: Deferral of $5 million in tax liability--$10 million deposit in reserve--for four years is a benefit of about $2.1 million at 15 percent cost of capital.)

Program 8 - Investment Tax Credits

Investment tax credits of 7.5 percent of cost of capital assets were made available to all German industry in 1975. This was referenced under aids to ship operators. Investments by German shipbuilders have been increasing over the period 1970-1974, despite a tax on investments during 1973. (Exhibit VI-17)

No data is available on the investments during 1975. If investments continued at the 1974 rate, this would have provided a benefit of $8.2 million that year. However, as discussed under aids to the national fleet, the 7.5 percent investment credit coupled with construction subsidies provided the ability for German shipowners to order heavily in overseas yards. As a result, the investment credit probably hurt the shipyards far more than it assisted them.

Exhibit VI-16

RESERVE FUNDS OF NINE MAJOR SHIPBUILDING COMPANIES

1970-1974

(millions of DM)

	1970	1971	1972	1973	1974
Reserves					
HDW	5	5	38	44	44
AG Weser	12	12	12	12	20
Bremer Vulkan	14	14	14	14	17
Rheinstahl Nordseewerke	2	2	2	2	2
Blohm & Voss AG	-	-	-	-	11
Flender Werft	9	11	12	10	10
FSG	5	5	5	5	9
SUAG	n.a.	n.a.	2	2	0.7
Werft Norbiskrgu GmBH	2	6	7	6	6
Increase (Decrease) in Reserves from Previous Year					
HDW	n.a.	-	33	6	-
AG Weser	n.a.	-	-	-	8
Bremer Vulkan	n.a.	-	-	-	3
Rheinstahl Nordseewerke	n.a.	-	-	-	-
Blohm & Voss AG	n.a.	-	-	-	11
Flender Werft	n.a.	2	1	(2)	-
FSG	n.a.	-	-	-	4
SUAG	n.a.	n.a.	n.a.	-	(1.3)
Werft Norbiskrug GmBH	n.a.	4	1	(1)	-
Total 9 Yards	n.a.	6	35	3	24.7

Source: Shiffsexport Finanziering, Deutsche Werften In Auf Und Ab Des Wectmarktes, Dr. Gunther Wolf, Frankfurt, 1975.

Exhibit VI-17

CAPITAL INVESTMENTS BY THE NINE LARGEST WEST GERMAN SHIPBUILDERS

1970-1974

Year	Capital Investments ($ millions)
1970	$11.7
1971	24.7
1972	53.8
1973	60.7
1974	109.5

Source: Shiffsexport Finanziering, Deutsche Werften In Auf Und Ab Des Wectmarktes, Dr. Gunter Wolf, Frankfurt, 1975.

(iv) *Direct Subsidies*

Program 9 - Construction Grants

Construction grants have been provided to German owners for 10 percent of the contract price of a new vessel, 12.5 percent in 1975 and 1976, and 17.5 percent in 1977. These grants are described above under aids to the West German National Fleet.

Although the subsidy is available by law for orders placed by West German owners in either foreign or West German shipyards, an informal understanding between German owners and German yards effectively caused most orders for new vessels under this program to be placed in West German shipyards. Only recently have the German owners placed a substantial order volume with foreign shipyards using the construction grant program.

Some ships ordered by German owners outside the construction grant program have been contracted in foreign shipyards. From 1970 to 1972, 39 percent of the gross tonnage delivered to the German fleet came from foreign shipyards, and for 1973-1975, the foreign yards' share was 11 percent.

(v) *Preference*

The Bardepot deposits discussed in the previous section appear to have been the only program creating an incentive for domestic construction. However, the program had minimal effect on the shipowning industry and was eliminated during the study period.

(vi) *Government Ownership*

Program 10 - Government Ownership

One major shipyard is owned 25 percent by the state government of Schleswig-Holstein and 75 percent by a state-owned steel mill.

(vii) Other

Program 11 - Export Credit Insurance

Government insurance of export credits to cover up to 90 percent of the political and economic risks of such credits. This program is operated by HERMES, a government owned institution, but is not used extensively by the shipbuilding industry.

Program 12 - R & D Support

The West German government sponsors Research and Development projects conducted by private organizations. This aid amounted to approximately $1.0 million per year during 1970-1975.

b. Benefits of West German Assistance Programs to the Shipbuilding Industry

Exhibit VI-18 summarizes the benefits of West German assistance programs to the shipbuilding industry. The principal assistance has been in the form of financing assistance for the provision of supplier credits. This aid, in the form of interest subsidies and low interest loans, has increased from $34 million to $66 million per year out of total assistance of from $39 million to $78 million between 1971 and 1975.

The above figures do not take into consideration the construction grants to West German shipowners. Although by law the grants can be used for foreign orders, a large proportion of these grants were used for construction in West German yards. Given the high proportion of deliveries to the national fleet, which averaged 73 percent over the period 1970-1975 and even higher during the latter part of the period when the VLCC subsidies were available, and also the questionable influence of the Bardepot deposits, it is estimated that construction grants in excess of $200 million were used on orders in West German yards.

Exhibit VI-18

SUMMARY OF BENEFITS OF WEST GERMAN ASSISTANCE PROGRAMS TO THE SHIPBUILDING INDUSTRY

1971-1975

(millions of dollars)

	1971	1972	1973	1974	1975
Program 1: ERP Funds for Modernization Program 2: Eastern Border Loans	3.3	3.3	3.3	3.3	3.3
Program 3: Interest Subsidies	24.2	24.2	50.4	50.4	50.4
Program 4: ERP & KW Loans	9.7	9.7	15.5	15.5	15.5
Program 7: Inventory Loss Res.	.7	4.3	.4	3.0	N.A.
Program 8: Investment Tax Credit	-	-	-	-	8.2[b]
Program 9: Construction Grants	a	a	a	a	a
Program 11: R&D Support	1.0	1.0	1.0	1.0	1.0
Subtotal	38.9	42.5	70.6	73.2	78.4

[a] Considered under Aids to National Fleet. However, given the proportion of deliveries to West German owners from domestic yards, the construction grants employed in domestic yards are estimated to have exceeded $200 million over the period, or approximately $40 million per year.

[b] At 1974 investment level, Program 8 introduced in 1975.

2. Effectiveness of Aids to the West German Shipbuilding Industry

As shown in Exhibit VI-19, the West German share of world shipyard orders decreased significantly in the 1971-1972 period and again in 1975. The strength of the industry in 1973 and 1974 was due primarily to the institution of the VLCC construction grants. Exhibit VI-20 reviews shipyard performance.

The variances in German shipyards' ability to compete for and secure shiporders raises the issue of whether high labor cost nations can expect to continue to compete for vessels on a competitive basis. While German grants and interest subsidies did permit the development of efficient VLCC construction capacity during the pre-embargo boom years, the real strength of German shipbuilding is its technological expertise which serves a much more select market.

German shipbuilding aids were not sufficient to cause the industry to become locked into process-oriented long-series production requirements for bulk tonnage, but did promote the construction of such tonnage as part of a national goal for increased energy transport independence. To the extent that German shipyards were encouraged to expand and invest in the short-lived VLCC building boom, German aids were detrimental and too late to permit Germany to develop the economies necessary to overcome the intrinsic handicaps of high labor costs. German maritime aids did promote fleet modernization but did not identify key ship types and create selective inducements as France had done. Given the enormous technological potential of German yards, the development of government supported standards, sophisticated ship designs and components, similar to those in Japan for bulk and general cargo tonnage, might have increased the competitiveness of German yards in the current recession.

The role of exports for the German industry is significant and has been hampered by the strength of German currency and its implicit cost to foreign customers through revaluations. While assisting German

Exhibit VI-19

WEST GERMAN SHARE OF WORLD SHIPBUILDING ORDERS

1969-1975

	1969	1970	1971	1972	1973	1974	1975
Tonnage Ordered from World Shipyards - GRT (millions)	30.1	41.0	29.6	30.4	73.6	28.4	13.8
W. German Yards' Share of Tonnage Ordered Worldwide (%)	7.0	5.7	4.0	2.5	7.1	8.9	5.2
Tonnage Ordered From W. German Shipyards - GRT (millions)	2.1	2.7	1.2	0.8	5.2	2.5	0.7

Sources: Lloyds Register of Shipping, Annual Report

Exhibit VI-20

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY

SHIPBUILDING

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: West Germany

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
				Deliveries[c]				
Total Ships[b]	- Number	105	115	85	66	58	73	-7.0
	DWT	2,205	3,043	1,764	2,613	3,877	4,140	13.4
	GRT	1,318	1,794	1,397	1,745	2,050	2,181	10.6
Tankers	- Number	8	24	12	10	23	22	22.4
	DWT	639	1,374	591	788	2,887	3,216	38.2
	GRT	376	666	293	393	1,471	1,587	33.4
Bulk Carriers	- Number	9	8	2	11	15	14	9.2
	DWT	605	828	83	1,124	831	576	-1.0
	GRT	342	459	47	622	470	319	-1.4
Freighters	- Number	88	82	70	45	19	35	-16.8
	DWT	857	834	1,083	701	156	345	-16.6
	GRT	600	649	1,037	730	96	265	-15.1
				Orders During Year[d]				
Total Ships[b]	- Number		37	11	115	89	142	40.0[a]
	DWT		2,446	521	10,146	2,870	1,622	-9.8[a]
	GRT							NA
Tankers	- Number		7	2	40	28	29	42.7[a]
	DWT		1,410	342	8,315	1,599	272	-33.7[a]
	GRT							NA
Bulk Carriers	- Number		10	3	23	7	21	20.4[a]
	DWT		899	112	1,251	683	433	-16.[illegible][a]
	GRT							NA
Freighters	- Number		19	5	51	49	92	48.3[a]
	DWT		130	60	580	578	915	62.9[a]
	GRT							
				Cancellations During Year[e]				
Total Ships[b]	- Number	6	2	7	9	2	10	10.8
	DWT	60	58	194	148	8	2,486	110.6
	GRT							NA
Tankers	- Number	0	2	2	0	0	10	49.3[a]
	DWT	0	58	117	0	0	2,486	155.9[a]
	GRT							NA
Bulk Carriers	- Number	0	0	1	2	0	0	NA
	DWT	0	0	54	117	0	0	NA
	GRT							NA
Freighters	- Number	6	0	4	7	2	0	-100.0
	DWT	60	0	23	31	8	0	-100.0
	GRT							NA

Exhibit VI-20
Shipbuilding (continued)

Country: West Germany

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Orders Outstanding at Year-End[c]								
Total Ships[b]	Number	248	168	87	127	156	215	-2.8
	DWT	8,341	7,686	6,249	13,634	12,619	7,615	-1.8
	GRT					8,500	5,096	NA
Tankers	Number	52	33	21	51	56	53	0.4
	DWT	4,244	4,222	3,856	11,383	10,095	4,665	1.9
	GRT					6,745	3,080	-
Bulk Carriers	Number	18	20	20	31	23	30	10.8
	DWT	1,678	1,749	1,724	1,734	1,586	1,443	-3.0
	GRT					1,056	929	NA
Freighters	Number	178	115	46	45	73	130	-6.1
	DWT	2,419	1,715	669	517	931	1,501	-9.1
	GRT					661	1,061	NA
Reported Financial Results (millions of dollars)								
Revenues		1,465	1,820	1,841	2,195	2,541	2,860	14.3
Profits		n/a						
Outstanding Debt		n/a						
Employment								
Employees at Year-End								
--Shipyard Employees (wage earners & salaried employees)		80,424	80,221	77,764	73,629	75,002	77,982	-0.6
-of which, those employed in shipbuilding		68,770	66,703	65,052	61,917	64,316	66,672	-0.6
-of which, wage earners employed in shipbuilding		55,029	53,356	52,037	48,987	50,753	52,870	-0.8

[a] 4-year annual growth rate, 1971-1975.

[b] Includes Combination Passenger/Cargo Vessels not shown separately.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[d] Source: Derived from orders outstanding, deliveries, and cancellations. Approximate due to timing differences in sources.

[e] Source: Fairplay International Shipping Weekly, World Ships on Order, quarterly.

shipyards, export and domestic ERP loans and interest subsidies used to adjust financing costs to OECD terms on export orders have not been able to counter this larger economic problem. Despite subsidy grants offered to owners, Germany has refrained from restricting the procurement policies of owners, consistent with the government's view of shipbuilding as a free market.

3. Recent and Prospective Programs

The West German shipbuilding orderbook was in a less vulnerable position than those of several major shipbuilding nations when the tanker overcapacity situation occurred. West German yards had chosen to remain diversified in several types of vessel construction and to avoid specializing in tankers as had certain other countries. By foregoing heavy participation in the potentially large profits in the tanker sector of the market, the German yards chose to minimize their exposure to a downturn in any single sector of shipbuilding.

At the end of 1974, German yards had orders for 156 vessels of 1,000 GRT or more. Of these, only 56 vessels or 36 percent were tankers. Twenty-three bulk carriers and 73 freighters rounded out the orderbook. The average size of the tankers was larger than the average size of the other vessels, however, so tankers represented a larger percentage of the tonnage accounting for 80 percent of the deadweight tonnage on the orderbook.

In contrast, tankers accounted for 57 percent of the vessels on order and 87 percent of the deadweight tonnage on order in Japan, and 84 percent of the vessels and 88 percent of the deadweight tonnage on the orderbook in Sweden at the end of 1974.

The West German yards have had difficulty in competing for new orders in 1975 and 1976 due to the low prices offered by Japanese and South Korean yards. Both export orders and orders for domestic owners have been affected.

In the domestic market, West German yards supplied 73 percent of the gross tonnage delivered to German owners in the 1970-1975 period, and in each of the last three years their share exceeded 80 percent. In 1975 and 1976, however, low contract quotes by Japan, in some cases 25 to 40 percent below those offered by West German yards, have attracted an increasing share of the orders from West German owners, and the 17.5 percent German construction grant in force in 1977 is insufficient in its ability to retain orders at home.

West Germany's Eighth Shipbuilding Assistance Program, covering deliveries from 1976 to 1979, has made available $370 million for construction grants to German owners to aid in the purchase of new vessels. The Eighth Program extended aids to German owners to generate business in German yards, but there is no restriction in the program against ordering in foreign yards. In contrast to France which has restricted French orders abroad, the German government appears determined to preserve the European shipbuilding market as a relatively free and non-protectionistic arena, no matter what the cost to its shipyards may be.

In the first half of 1975, the German government also introduced a 7-1/2 percent investment grant for all German investors which also lacked effective restrictions against ordering ships abroad. As a result, approximately $480 million of new orders were placed by German owners in foreign yards during 1975. These were supported by $36 million in subsidies by the German government under the 7-1/2 percent investment grant program. These vessels could also have utilized the 12.5 percent construction subsidy, but instances of both being used together were limited. The 17.5 percent grants of 1977 did not explicitly restrict German orders abroad, but the intent of the government has been made clear to the industry through government review mechanisms.

The domestic yards' share of German owner's business in 1976 continued at levels substantially below the 1970-1975 average, declining to 44 percent of the ships and 36 percent of the gross tonnage in the first half. German yards received orders from German owners for 34 vessels of 107,453 grt in the first half of 1976 while foreign yards received orders from German owners for 43 vessels of 187,900 grt in the same period.

The 7.5 percent Industrial Investment Grant was replaced in mid-1976 with a combination of two existing programs that had previously not been permitted to be used simultaneously. By extending the yards' 2 percent interest subsidy program on supplier credits to cover domestic orders as well as the previously covered export orders, as well as the 12.5 percent investment grant, the Bonn government sought to decrease the dependence of the West German yards on export orders. Although the combination program appears to have been received unenthusiastically by West German owners, the share of their business generated by domestic owners rose in the second half of 1976 to 74 percent of the vessels and 81 percent of the gross tonnage compared to deliveries of 14 percent of vessels and 17 percent of gross tonnage to domestic owners in 1975 and 49 percent of vessels and 39 percent of the gross tonnage to domestic owners in the 1970-1975 period. Thus, while the programs have not generated orders for substantial tonnage from German owners (the second half of 1976 rate of orders for tonnage from domestic and foreign sources represented only 12 percent of the rate of deliveries in 1975), the lack of orders for large amounts of tonnage appears to be even more acute in the export sector which had accounted for the majority of the tonnage delivered from West German yards in five of the past six years.

With the capacity to deliver 4.2 million dwt per year and a year-end 1976 backlog of 3.1 million dwt, the challenge of the survival of German shipyards was enormous. While recent subsidies of capital and interest costs stimulated some orders, the absence of additional orders for large tanker and bulk carrier tonnage caused shipyards to compete for higher labor input/ton mid-sized vessel types against tough foreign competition including Japan and South Korea. By January 1977 German shipyard orderbooks contained 3.51 million dwt of orders, 29 percent of the tonnage for the German flag. In 1975, the average vessel delivered was 59,000 dwt and by year-end the orderbooks held orders for vessels with an average deadweight of 35,000. The early 1977 German orderbook contained an average sized vessel of 16,500 dwt and this rapid decline in vessel size represents a challenge even to the flexible processes and high sophistication of the German shipbuilding industry.

VII. THE MARITIME AIDS OF FRANCE

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VII. THE MARITIME AIDS OF FRANCE

A. SUMMARY

1. Background

The French national fleet increased its share of world deadweight tonnage from less than 2.8 percent to nearly 3.2 percent over the period 1966 to 1975, and is the only study country to show an increase other than Japan, which increased its share early in the study period but began to decline in share towards the latter part of the period. France's shipbuilding output also increased over the study period.

The relative sizes of the French ship operating and shipbuilding industries were more similar than any of the other study countries. Between 1970 and 1975, total deliveries to the French national fleet and total output of the French shipbuilding industry were within 3 percent on a deadweight basis. Moreover, over the five year period, about two-thirds of French yard output entered the national fleet, while two-thirds of the deliveries to the fleet came from French yards.

The coincidental congruity of the two industries has begun to diverge, however. As shown in Exhibit VII-1, the respective fleet and yard shares of the other's deliveries have trended downward over the period. By 1975, only 35 percent of yard output entered the fleet, and 42 percent of the deliveries to the fleet came from French shipyards. This was due to the French fleets ordering of general cargo and bulk carrier tonnage abroad, primarily in Japan, while ordering high technology ship types in France. Simultaneously, the French program of building LNG vessels, container and vehicle carriers domestically resulted in a number of foreign fleets placing orders in France.

Exhibit VII-1

SUMMARY OF NATIONAL FLAG FLEET AND SHIPBUILDING ACTIVITY
1970-1975

FRANCE

	1970	1971	1972	1973	1974	1975
Total Deliveries - French Shipyards						
Vessels	27	24	23	25	19	27
DWT (000)	1,363	1,829	1,620	2,041	1,982	1,855
GRT (000)	798	1,053	928	1,164	1,093	1,190
Deliveries for French Registry from French Shipyards						
Vessels	12	17	10	14	9	10
DWT (000)	816	1,720	752	1,242	1,099	648
GRT (000)	469	927	412	663	567	383
Deliveries for French Registry from World Shipyards						
Vessels	18	29	22	22	34	21
DWT (000)	913	2,329	1,067	2,099	3,104	1,546
GRT (000)	533	1,254	583	1,130	1,674	858
French Owners Share of French Shipyard Deliveries (Percent)						
Vessels	44	71	43	56	47	37
DWT (000)	60	94	46	61	55	35
GRT (000)	59	88	44	57	52	32
French Shipyards Share of Deliveries to French Owners (Percent)						
Vessels	67	59	45	64	26	48
DWT (000)	89	74	70	59	35	42
GRT (000)	89	74	70	59	34	45

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce, annual.

A large percentage of the deliveries to the French fleet contributed to the growth of the fleet, rather than replacement of older vessels. As a result, the average age of the fleet improved over the study period, but less so than for other countries with a high replacement rate (Exhibit VII-2). Exhibit VII-3 presents the growth and replacement of the French fleet, all tankers being added for fleet expansion and not replacement.

2. Conclusions

The assistance programs for the French national fleet have been directed towards increasing the French share of foreign trade and reducing the amount of France's negative maritime transport balance of payment account. Towards that end, France's assistance programs have been oriented towards growth of the fleet. The French government has assisted the shipping industry via five-year plans, with Plan VII covering 1976-1980 representing the seventh comprehensive national plan in post-war France.

The principal assistance programs have been interest subsidies on ship financing and accelerated depreciation. Over the course of the study period, the emphasis shifted to rapidly increasing direct construction subsidies and equipment grants. The capital gains tax is low in France, but no provisions for deferral of the tax exist. Thus, the principal benefits of the French assistance programs are structured to stimulate new growth construction rather than to encourage rapid turnover of the fleet.

The assistance programs for the French national fleet result in one of the highest assistance levels per revenue dollar and per deadweight ton in the fleet and reflect the importance placed on stimulating growth. During the study period, the French national fleet recorded the largest growth rate in registered tonnage. Contributing to this was France recording the highest percentage of deliveries allocated to net growth as opposed to replacement.

Despite its growth, the French national fleet did not significantly increase its share of French foreign commerce during the period nor did the deficit balance

Exhibit VII-2

FRENCH FLEET

SHARE OF WORLD FLEET AND AVERAGE AGE
1966-1975

	1966	1968	1970	1972	1974	1975
Vessels Registered Under French Flag Percent of World Fleet						
Total Fleet[1]	2.9	2.5	2.3	2.0	1.9	1.9
Tankers	4.2	3.6	3.2	2.9	2.9	2.9
Bulk Carriers	2.8	2.4	2.1	1.8	1.4	1.3
Freighters	2.4	2.1	2.0	1.8	1.7	1.8
Deadweight Tonnage Registered under French Flag Percent of World Fleet						
Total Fleet[1]	2.9	2.8	2.8	2.9	3.2	3.2
Tankers	4.0	3.9	3.8	4.2	4.6	4.4
Bulk Carriers	1.9	2.0	1.6	1.6	1.6	1.6
Freighters	2.0	1.9	2.0	1.9	1.9	2.0
French Fleet - Average Age of Vessels (Years)						
Total Fleet[1]	12	11	11	10	10	10
Tankers	11	10	10	10	9	8
Bulk Carriers	10	7	8	9	8	8
Freighters	13	12	12	11	10	11
World Fleet - Average Age of Vessels (Years)						
Total Fleet[1]	17	13	13	12	12	12
Tankers	11	11	11	11	11	11
Bulk Carriers	11	9	8	8	9	9
Freighters	16	15	13	13	13	13

[1] Includes Combination Passenger/Cargo not shown separately.

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce.

Exhibit VII-3

COMPARISON OF FLEET GROWTH - FRANCE AND WORLD

1970-1975

(deadweight tons in millions)

GROWTH IN REGISTERED FLEET

	Deadweight Tons 1970	Deadweight Tons 1975	Percent Change	World Deadweight Tons 1970	World Deadweight Tons 1975	World Percent Change
Total Fleet	9.0	17.7	97	327.0	556.6	70.2
Tankers	5.8	13.2	128	153.1	302.2	97.4
Bulk Carriers	1.2	2.4	100	77.2	150.1	94.5
Freighters	1.9	2.1	11	92.4	101.2	9.6

NEWBUILDING DELIVERIES TO THE FLEET

	Deadweight Tons Delivered to Fleet	Percent of 1970 Fleet DWT	World Deadweight Tons Delivered to Fleet	World Percent of 1970 Fleet DWT
Total Fleet	11.1	123	254.8	78
Tankers	7.3	126	157.1	103
Bulk Carriers	1.5	125	73.5	95
Freighters	.7	37	24.0	26

SHARE OF NEWBUILDING DELIVERIES USED FOR NET FLEET GROWTH AND FOR VESSEL REPLACEMENT

	Percent for Net Fleet Growth	Percent for Vessel Replacement	World Percent for Net Fleet Growth	World Percent for Vessel Replacement
Total Fleet	78.5	21.5	90	10
Tankers	100.0*	0.0*	95	5
Bulk Carriers	78.3	21.7	99	1
Freighters	32.3	67.7	37	63

*All new deliveries were used for fleet expansion.

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

of marine transport decrease to the desired level. However, French vessels operated almost 40 percent in the cross-trades on a revenue and tonnage basis. This cross-trading is a necessity due to the requirement of serving a range of European ports short distances apart and also for sophisticated French-flag vessels operating in multi-national consortia. Exhibit VII-4 presents French home and cross-trade revenues for 1973 and 1974. Exhibit VII-5 displays the tonnage related to these trades.

Taking these operating factors into account, the receipts from cross-trades offset significantly the negative balances on maritime transport, while the total carriage of the French national fleet was equivalent to over 50 percent of France's foreign trade in all years but 1974. Although this figure had been declining from 1970 through 1974, in 1975 the total carriage of the fleet rebounded to an equivalent 60.3 percent of French foreign trade. Exhibits VII-6 and VII-7 show cargo shares and fleet revenues.

France has specified particular objectives in the carriage of oil and energy products to French shores and oil pipeline terminals in Northern Europe. By 1975 total carriage of oil by the French fleet reached an equivalent 71.3 percent of the carriage of oil tonnage in French foreign trade and was equivalent to over 75 percent of the ton-miles.

The French assistance to the shipbuilding industry has also been expensive. France has provided credit assistance and construction subsidies to maintain the competitiveness of French shipyard prices, both for domestic buyers and for export markets. The construction subsidy program was phased down during the study period, but continued to provide significant benefits through 1975.

Exhibit VII-4

REVENUES OF THE FRENCH NATIONAL FLEET
1973-1974
(millions of dollars)

	1973		1974	
	Dollars	Percent	Dollars	Percent
French Exports	$ 303.3	20	$ 478.3	25
French Imports	518.3	34	625.3	32
Crosstrades	599.6	39	723.2	37
Subtotal	$1,416.1	93	$1,826.7	94
Passenger	105.0	7	116.6	6
Total	$1,521.1	100	$1,943.4	100
Of Which Chartered in Vessels	191.3	13	233.3	12

Source: Interviews

Exhibit VII-5

TONNAGE OF THE FRENCH NATIONAL FLAG
1974-1975
(thousands of tons)

		1974	1975
A.	French Foreign Trade		
	Export	4,410	4,261
	Import	42,095	43,703
B.	French Zone*		
	Export	2,511	2,464
	Import	12,670	10,628
C.	Crosstrade	42,013	49,209
D.	Cabotage	19,897	16,459

*French Zone includes Algeria, Morocco, Tunisia, Djibouti, Cameroon, Central African Republic, Gabon, Senegal, Benin, Niger, Ivory Coast, Upper Volta, Sierre Leone, French Guiana.

Source: Le Transport Maritime Etudes Et Statistiques 1976, Comite Central Des Armateurs De France.

Exhibit VII-6

FRENCH FLEET SHARE OF FRENCH COMMERCE AND TOTAL CARRIAGE AS A PERCENT OF FRENCH TRADE

(percent)

	French Fleet Share of France's Foreign Trade		French Fleet Total Carriage as a Percent of France's Foreign Trade	
	Oil	Total	Oil	Total
1970	41.7	39.2	68.8	63.1
1971	31.4	31.3	59.7	56.3
1972	33.1	32.6	58.3	53.6
1973	31.7	30.5	54.5	51.0
1974	32.2	29.2	56.8	49.4
1975	35.7	33.7	71.3	60.3

Source: Le Transport Maritime Etudes Et Statistiques 1976, Comite Central Des Armateurs De France.

Exhibit VII-7

FRENCH BALANCE OF MARITIME TRANSPORT
1971-1975
(millions of dollars

	1971	1972	1973	1974	1975
Receipts	652	681	824	1,236	1,292
Expenditures	1,175	1,138	1,367	2,166	1,803
Balance	(523)	(457)	(543)	(931)	(511)
Crosstrade Receipts			600	723	

Source: Exhibit VII-4 and Le Transport Maritime Etudes Et Statistiques 1976, Comite Central Des Armateurs De France.

A special inflation insurance program aimed at increasing the competitiveness of French shipyards by allowing the quotation of fixed prices was the costliest assistance program. Rapid inflation over the study period required significant increases in the funding levels of this program. By 1975, the program expenditures were estimated at approximately 20 percent of the value of deliveries.

With the recent decline in interest rates, lower inflation and the phasing out of the construction subsidy program, the French shipbuilding industry was faced with little potential current benefit from the French assistance programs, although the industry received one of the highest levels of assistance of any of the countries studied over the study period.

The percentage of orders for export significantly increased during the study period. As the real value of the French assistance programs decreased towards the end of the study period the ability of French shipyards to secure new orders declined sharply and necessitated the re-introduction of direct assistance in 1976 and 1977.

The primary source of orders currently appears to be for the construction of domestic vessels called for in Plan VII. However, although orders in French yards represent more than half of the French tonnage on order worldwide, the level of domestic orders is significantly below that which was previously expected to permit the maintenance of full employment in the French shipbuilding industry.

B. AIDS TO THE FRENCH NATIONAL FLAG FLEET

1. Aid Programs

The programs employed by the French government to aid the national flag fleet have been oriented toward increasing the French flag share of the French foreign trade. In particular, an increase in the French share of its liner foreign trade has been a principal focus of the two most recent five year plans of the French government.

The principal French aids to shipowners are treated in each Plan as a comprehensive fleet program with multiple year appropriations. Plan VI, covering 1971-1975, had a goal of increasing French exports to produce a balance of trade surplus of approximately $2[1] billion per year by 1975. It also sought to increase the export of services, particularly maritime transport and insurance.

In 1971, French flag vessels carried 31.7 percent of French oceanborne imports and 23.3 percent of French oceanborne exports. These shares remained fairly constant through 1974 and rose slightly in 1975 to 33.6 percent of imports and 24.1 percent of exports.

The principal types of aids employed by the French government to achieve these goals for the French fleet have been (1) equipment grants to French owners for the purpose of acquiring new vessels, (2) interest subsidies to reduce the cost of borrowing for French owners, (3) government absorption of a share of social welfare costs for French seamen, (4) accelerated depreciation schedules on capital assets to encourage replacement of aging equipment, (5) cargo preference on limited sectors of the French foreign trade, and

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[1] *Dollar values in this chapter have been converted at the 1975 exchange rate of 4.2864 French francs to the dollar.*

(6) direct government ownership of certain shipping companies. The principal aid programs for French vessel owners during the 1970-1975 period are summarized in Exhibit VII-8, and discussed in detail in the remainder of this Section. Section B.2. addresses the effectiveness of these aid programs, and Section B.3. discusses recent and prospective programs.

a. Principal Aids to the French National Fleet

(i) Investment Financing Assistance

Program 1 - Interest Subsidies

The government assists French shipowners in financing new vessels through the use of interest subsidies. The National Credit Bank, a nationalized commercial bank, is a major source of loans to French owners. These loans are provided at normal interest rates and the French government subsidizes the difference between these rates and a lower fixed rate established by the government. The subsidies are available on credit from foreign sources as well.

Between 1971 and 1976, two phases can be distinguished in the structure of French interest rates. From 1970 to the end of 1972, the discount rate fell from an average of 7.62 to 6.25 percent. Other interest rates followed the same pattern. From 1973 throughout 1974, interest rates rose with the discount rate, from 6.25 percent in 1972 to 12.5 percent in 1975. A period of easier monetary policy in the second half of 1975 and 1976 strongly supported the financing needs of French enterprises during the recovery of the economy. The discount rate was gradually lowered to 8.0 by the end of 1975.

The fixed level of interest rate has increased over the study period, from 6.5 percent to 8.0 percent. The annual rate of interest subsidy for French shipowners was fixed at 8 percent for contracts after November 1974. Thus, by the end of 1975, interest subsidies provided little benefit to new contracts because interest costs had declined to approximately the subsidized rate. (Table VII-1)

Exhibit VII-8

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE FRENCH NATIONAL FLEET

1970-1975

i. Investment Financing Assistance

Program 1: Interest Subsidies

ii. Credit Assistance

iii. Tax Allowance Programs

Program 2: Accelerated Depreciation

Program 3: Low Capital Gains Tax

Program 4: Value Added Tax Exemption

Program 5: Reimbursement of Social Taxes

iv. Direct Subsidies

Program 6: Equipment Grants

v. Preferences

Program 7: Cargo Preference

Program 8: Cabotage and Bilateral Trade

vi. Government Ownership

Program 9: Government Ownership

vii. Other

Table VII-1

NET INTEREST RATES AFTER INTEREST SUBSIDIES ON LOANS TO FRENCH SHIPOWNERS

	1970	1971	1972	1973	1974	1975
Net Interest Rate Paid by French Owners (Percent)	6.5	6.5	6.5	6.5	7.25	8.0

Source: Interviews

Investment by the French shipping industry is estimated to have averaged $667 million per year over the study period. At this level of investment, a potential benefit of up to $64 million per year can be estimated from this program. This is based upon an average 3 percent differential on loans during the period, with the present value of the amortized loans reduced by 12 percent of the value of the financing. With the narrowing gap between the subsidized interest rate and the prevailing market rates, the benefits of this program can be expected to decline. Ongoing funding of earlier contracts will, however, maintain the costs of the interest subsidy program for several years.

The French capital markets are among the most closely controlled in Western Europe. The government controls the largest banks and, like the Japanese banking structure, closely allocates the availability of credit through the Central Bank. The French Treasury is also a major source of financing for major industries.

Even though the French credit and capital markets are among Europe's better developed, French enterprises will be forced to use an increasing portion of their own savings to finance investment. This results both from credit curbs of the Banque de France enforced in the fall of 1976 and from the reluctance of foreigners to invest in France for fear that the monetary authorities might suddenly reapply major restrictions on capital movements. Close control of international capital movements is also exercised by the banks, making it difficult for industry to make major purchases abroad without government approval.

French enterprises traditionally finance a large proportion of their investment through their own savings. Presently, only one-third of private investment is financed from external sources. Public enterprises derive the bulk of their external financing from long-term credits and the debenture market. They also receive capital grants and capital equipment subsidies from the government.

(ii) Credit Assistance

Credit assistance is not applicable to national flag operators.

(iii) Tax Allowance Programs

Program 2 - Accelerated Depreciation For New Vessels

The depreciation schedules available to French industry permit declining balance depreciation rates up to 2-1/2 times the straight line rate on assets with useful life of more than six years. The normal straight line rate for vessels is 12.5 percent per year based on an eight year useful life. The depreciation on a vessel using a declining balance schedule at 2-1/2 times straight line, eight years useful life is as shown in Table VII-2.

Table VII-2

ACCELERATED DEPRECIATION SCHEDULE

Year	Depreciation
1	31.0%
2	21.0%
3	15.0%
4	12.5%*

*Assuming switch to straight line as permitted under French tax law.

Compared with straight line depreciation, the after tax current value of the accelerated depreciation is approximately 5 percent of the investment. The equipment grants discussed in the following section must be deducted from the depreciation base in determining a vessel's depreciation schedule.

An estimated $667 million per year worth of new constructions were added to the French national fleet over the study period. Based on the 5 percent discounted present values of the depreciation, an average benefit of $33.4 million accrued to the owners.

Program 3 - Low Capital Gains Tax

The long-term (over two years) capital gains tax rate in France is only 10 percent. This applies to all industries. Although the capital gains tax rate is relatively low, the tax is fully payable and no reserve funds are available to defer the tax liability. The absence of reserves and tax deferrals even if countered by accelerated depreciation creates a relatively low incentive for replacement and a higher incentive for fleet growth. Norway, Sweden and more recently, Japan, have accelerated deferral on capital gains to foster replacement. The "non-assistance" may have contributed in part to the high percentage of deliveries applied to net growth of the French national fleet, the highest of any of the six countries.

Program 4 - VAT Exemption

Ships purchased by French owners are exempt from the 20 percent Value Added Tax (VAT). All capital goods purchased are exempt from the Value Added Tax, and the purchase of new vessels fall under this general provision of the VAT.

Program 5 - Reimbursement of Social Taxes

The government reimburses French owners for part of their cost incurred under Article 79 of the Maritime Code, which covers "Accidents and illness occurring on board or in the course of embarking".

These social benefits that French owners are required to pay have no counterpart in other major maritime nations. Thus, in order not to penalize French owners engaged in competition with the fleets of other countries, the government has absorbed a share of these social costs. The percentage absorbed by the government declined from 65 percent in 1966 to 47 percent recently. The government contribution to the French owners' costs under this program have been between $1.5 million and $3.6 million per year during the 1972-1975 period. The program was terminated in July 1976, with only minor payments made that year. French owners have requested that this program be reinstituted. Exhibit VII-9 presents the government's appropriations and expenditures for the reimbursement program.

(vi) Direct Subsidies

Program 6 - Equipment Grants

Equipment grants to French owners for constructing or modernizing vessels are based on a percentage of the contract value of the construction. These have varied by vessel type and amount in the three most recent five year plans as shown in Exhibit VII-10.

Under Plan VI, equipment grants to French shipowners increased from $5 million in 1971 to $21 million in 1974. In 1975, a combination of Plan VI and Plan VII funds yielded $42 million in grants. Plan VII initially authorized $233 million over the period 1976 to 1980. Amounts budgeted during 1976 and 1977 are approximately $40 million per year and are presented in Exhibit VII-11.

However, as discussed in Section VII.B.3., the Plan VII subsidy level was increased further to $280 million during 1976. Commitment of approximately 90 percent of the original funding had generated orders for only 41 percent of the original planned gross registered tonnage.

Exhibit VII-9

GOVERNMENT CONTRIBUTIONS TO FRENCH SEAMEN SOCIAL COSTS

1972-1976

(millions of dollars)

Year	Amount Appropriated	Amount Paid
1972	3.5	3.5
1973	3.6	3.6
1974	1.5	1.5
1975	4.0	2.3
1976	2.8	0.2

Source: Interviews

Exhibit VII-10

COMPARISON OF PLANS V, VI, AND VII EQUIPMENT GRANTS 1966-1980

Plan:	Plan V	Plan VI	Plan VII
Years:	1966-70	1971-75	1976-80
Percentage of Contract Value:	up to 12%	3% for product tankers 3-8% for bulk carrier by size 10% for cargo liners 15% for container/RoRo	2% for bulk carriers above Panamax size 3% for product tankers 4% for bulk carriers 30M dwt to Panamax 8% for small bulk carriers 10% for conventional vessels 15% for container/RoRo
Amount:	$23 million	$93 million	$233 million

Source: Interviews

Exhibit VII-11

EQUIPMENT GRANTS TO FRENCH SHIPOWNERS
1970-1977

	1970	1971	1972	1973	1974	1975	1976	1977
Equipment Grants ($ millions)	4.20	5.83	18.66	16.33	21.00	41.99[a]	39.43	39.40

[a] Includes allocation of outstanding Plan VI funds and approximately $15 million of Plan VII funds for second-hand vessels purchased with one-half the grant percentage of contract value.

Source: Interviews

Exhibit VII-12

FRENCH FLAG SHARE OF PETROLEUM IMPORTS

	1971	1972	1973	1974	1975
Petroleum Imports (millions of tons)	114.5	125.4	141.3	136.0	114.2
French-flag Share	32.3%	33.9%	32.6%	32.9%	36.6%

Source: Exhibit VII-14.

(v) Preferences

Program 7 - Cargo Preference

Two-thirds of the ton-miles of French crude oil imports for internal consumption must be carried on French flag ships or in ships whose charter parties have been approved by the Ministry of Transport and the Ministry of Fuel. Waivers of this requirement are frequently granted, but the French tanker fleet exceeds this carriage requirement when deliveries to Northern European pipeline terminals are included. On a tonnage basis, French crude oil imports and French flag share during the five years of Plan VI are recorded in Exhibit VII-12.

French tanker fleet increased from 5.8 million dwt in 1970 to 13.2 million dwt in 1975, a growth of 127 percent in five years. The new large tankers added to the French fleet, however, have carried crude oil to other European ports. Including the ton-miles for such trade, by 1975 the French tanker fleet carried an amount of crude and product cargo that on a ton-mile basis was equivalent to 75 percent of the ton-miles for French crude and product imports that entered France through French ports.

Program 8 - Cabotage and Bilateral Trade

Trade between France and Tunisia and France and Algeria is reserved to vessels of French and Tunisian and French and Algerian registry, respectively. Coastal trade is totally protected and is the coastal trade between France and LaGuyana, LaGuadeloupe, and La Martinique.

(vi) Government Ownership

Program 9 - Government Ownership

The French government acquired 100 percent ownership of the Compagnie Generale Maritime (CGM) in December 1973. CGM is a holding company for the Compagnie Generale Transatlantique and the Compagnie des Messageries Maritimes, each of which still have minority private ownership.

b. Benefits of French Assistance Programs to the National Fleet

Over the study period, the assistance programs to the French national fleet have been primarily programs for financing assistance in the form of interest subsidies. The equipment grant program, however, has been significantly increased during the period. Plan VI, which coincided with the study period, provided almost $100 million in equipment grants or four times the funding level of Plan V. Plan VII funding has been increased to $280 million, almost three times the level of Plan VI funding, and will over the next five years be the major source of assistance to the industry. Exhibit VII-13 summarizes the benefits that accrued to French operators during Plan VI, particularly the rise in utilization of equipment grants.

2. Effectiveness of Aid Programs

The deadweight tonnage of the French fleet grew from 9 million in 1970 to 17.7 million in 1975, a 96 percent increase compared to a 70 percent increase for the world fleet during this period. In addition to growing faster than the world fleet, the French fleet also was replacing its older tonnage with new vessels at a faster pace than that of the rest of the world. Of the deadweight tonnage delivered to the world fleet from 1971 to 1975 inclusive, 10 percent replaced old tonnage and 90 percent was used to increase the size of the fleet. For France, 21 percent of the deadweight tonnage delivered to the fleet replaced old tonnage, leaving the remaining 79 percent for fleet growth. Thus, the rate of deliveries to the French fleet as a percent of the existing fleet in 1970 exceeded the world fleet's rate by more than the 96 percent to 70 percent margin mentioned above, since a faster replacement program was underway in addition to the net growth in the fleet. In terms of the fleet tonnage that existed in 1970, the French fleet replaced 20 percent of that tonnage with new vessels in the 1971-1975 period while the world fleet replaced 7 percent of its 1970 tonnage.

Exhibit VII-13

SUMMARY OF BENEFITS TO FRENCH OPERATORS

1971-1975

(millions of dollars)

	1971	1972	1973	1974	1975
Program 1: Interest Subsidy	64.0	64.0	64.0	64.0	64.0
Program 2: Accelerated Depreciation	33.4	33.4	33.4	33.4	33.4
Program 3: Low Capital Gains Tax	a	a	a	a	a
Program 5: Social Costs	3.5	3.5	3.6	1.5	2.3
Program 6: Equipment Grants	5.8	18.7	16.3	21.0	42.0
Subtotal[b]	106.7	119.6	117.3	119.9	141.7

[a] Considered minimal

[b] Excludes operating subsidies for passenger ships.

The rate of replacements varied significantly among the three major sectors of the fleet, however. The French tanker fleet took deliveries of new vessels equal to 126 percent of the deadweight tonnage of the 1970 fleet, and virtually all of this tonnage served to increase the size of the fleet with no net replacement of older tonnage. Some tankers were scrapped or sold during the period but these were replaced by transfers to the fleet of used vessels from other registries.

The French bulk carrier fleet took deliveries of new vessels equal to 120 percent of its 1970 tonnage and used 22 percent of this new tonnage to replace old tonnage and 78 percent for fleet growth. The French freighter fleet, however, took deliveries of new vessels equal to 35 percent of its 1970 tonnage, used 68 percent of this new tonnage for replacement of the existing fleet, and only 32 percent for fleet growth.

Of the six major maritime nations, only France and Norway increased the deadweight tonnage of their freighter fleets between 1970 and 1975. The pattern of vessel replacement and fleet growth for the freighter fleets of these two nations closely approximated the pattern observed for the world freighter fleet, while the freighter fleets of West Germany, Japan, Sweden, and the United Kingdom declined in deadweight tonnage between 1970 and 1975.

The total fleet growth increased France's share of the world deadweight tonnage from 2.8 percent to 3.2 percent. The vessels acquired by the French fleet were generally larger than those added to the world fleet, however, and the French fleet's share of vessels registered in the world dropped from 2.3 percent in 1970 to 1.9 percent in 1975 despite France's increased tonnage share.

As mentioned above, the expansion of the French fleet was more pronounced in the tanker sector. The deadweight tonnage of the French tanker fleet increased by 127 percent from 1970 to 1975 compared to increases of 94 percent for bulk carriers and 11 percent for freighters. The world bulk carrier and freighter fleets grew at rates nearly identical to those of the French fleet, but the world tanker fleet grew 97 percent, only three-fourths as fast as the French tanker fleet. As a result of the difference in growth rates, the French tanker fleet's share of the world tanker fleet's deadweight tonnage increased from 3.8 percent in 1970 to 4.4 percent in 1975 while the French fleet's share remained static over the period at 2.0 percent and 1.6 percent of the freighter and bulk carrier fleets, respectively.

The French fleet's share of France's oceanborne foreign trade has remained nearly constant during the 1971-1975 period although some shifts did take place in certain segments of the foreign trade. Exhibit VII-14 summarizes the tonnage of oceanborne imports and exports by major commodity groupings and the French-flag share of each grouping for the years 1971 through 1975.

Employment on French merchant ships declined from 26.1 thousand to 17.1 thousand during the 1970-1975 period. Over 97 percent of the seamen employed by the fleet were French nationals, as shown in Exhibit VII-15.

3. Recent and Prospective Programs

In the past few years, the French government has placed a high priority on developing the maritime sector. Direct aids such as the equipment grants have become increasingly important as evidenced by the increase from $23 million to $93 million to $233 million in three successive five year plans. These aids are more structured than many of the indirect aids employed by other nations to encourage development of specific sectors of the fleet.

Plan VII covering 1976-1980 has set ambitious goals for growth of the French fleet with gross registered tonnage expected to grow to 16 million in 1980 from the 1975 level of 10.3 million, a 75 percent increase.

EXHIBIT VII-14

NATIONAL FLAG SHARES OF FRENCH SEABORNE FOREIGN TRADE

1971-1975

(tons in thousands)

	1971		1972		1973		1974		1975	
	Tons	French-Flag Share (%)	Tons	French-Flag Share (%)	Tons	French-Flag Share (%)	Tons	French-Flag Share (%)	Tons	French-Flag Share (%)
IMPORTS										
Petroleum Products	114,538	32.3	125,396	33.9	141,258	32.6	136,023	32.9	114,222	36.6
Coal	6,775	30.4	5,714	36.5	6,093	42.6	9,483	31.0	11,526	45.1
Minerals	10,503	20.4	13,801	31.4	13,533	19.3	18,194	13.5	14,314	21.0
Phosphate	3,650	8.0	3,765	5.6	4,495	6.1	5,360	6.9	3,187	6.9
Other Bulk	3,019	6.3	2,959	5.6	3,191	6.4	3,480	6.1	2,874	4.1
Lumber, Wine, Paperpulp	3,515	22.9	3,895	27.4	4,537	21.4	4,003	18.7	2,774	24.3
Wine & Other	547	32.0	841	31.9	839	49.3	558	42.8	800	38.1
Other Goods	10,726	28.3	11,283	26.0	12,888	23.8	12,709	23.5	11,658	25.1
TOTAL	153,273	29.8	167,660	32.0	186,834	30.1	189,810	28.9	161,355	33.6
EXPORTS										
Petroleum Products	5,469	4.5	4,261	6.5	5,745	8.2	3,896	6.2	5,099	12.0
Animal Products	3,760	9.4	5,757	12.3	6,677	8.2	7,267	7.0	5,940	8.1
Sulfur	947	30.3	987	35.8	859	50.5	862	42.0	485	49.7
Other Bulk	1,601	13.5	1,806	23.6	1,653	19.0	1,902	15.7	1,384	18.2
Metal Products	1,705	37.4	2,224	36.9	2,184	34.9	2,782	40.2	2,692	35.9
Other Goods	9,679	36.9	10,527	35.1	13,059	32.0	13,790	31.5	12,254	34.0
TOTAL	23.161	22.9	25,562	24.6	30,177	22.2	30,499	22.7	27,854	24.1

Source: 1971-1972, Bremen Institute of Maritime Economics; 1973-1975, Comite Central des Armateurs de France, Le Transport Maritime, Etudes et Statistiques, 1976.

Exhibit VII-15

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY
FLEET OPERATIONS

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: France

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Fleet Size Registered, Fleet Growth[b]								
Total Ships[a]	- Number	457	450	427	413	428	444	0.6
	DWT	9,007	10,999	11,733	13,482	16,183	17,690	14.5
	GRT	6,049	7,029	7,337	8,188	9,549	10,319	11.3
Tankers	- Number	135	134	132	137	149	154	2.7
	DWT	5,799	7,448	8,152	9,731	11,947	13,190	17.9
	GRT	3,487	4,309	4,643	5,424	6,543	7,156	15.5
Bulk Carriers	- Number	61	64	64	57	59	57	-1.3
	DWT	1,240	1,576	1,694	1,851	2,285	2,405	14.2
	GRT	823	1,004	1,058	1,116	1,366	1,427	11.6
Freighters	- Number	242	238	219	211	213	227	-1.3
	DWT	1,852	1,885	1,828	1,861	1,916	2,062	2.2
	GRT	1,485	1,513	1,455	1,514	1,524	1,629	1.9
Deliveries to the Fleet[c] (where intended registry is known)								
Total Ships[a]	- Number	18	29	22	22	34	21	3.1
	DWT	913	2,329	1,067	2,099	3,104	1,546	11.1
	GRT	533	1,254	583	1,130	1,674	858	10.0
Tankers	- Number	4	14	7	11	14	7	11.8
	DWT	695	1,847	765	1,672	2,439	595	-3.1
	GRT	365	958	386	853	1,252	344	-1.2
Bulk Carriers	- Number	1	4	2	1	10	1	0.0
	DWT	25	339	174	260	545	168	46.4
	GRT	16	190	96	131	327	94	42.5
Freighters	- Number	13	11	13	10	10	6	-14.3
	DWT	193	143	128	167	120	91	-14.0
	GRT	152	106	101	146	95	66	-15.4
Vessels on Order at Year-End[c] (where intended registry is known)								
Total Ships[a]	- Number	83	82	65	72	60	77	-1.5
	DWT	6,828	7,546	7,262	9,125	7,693	5,782	-3.3
	GRT					4,570	3,661	NA
Tankers	- Number	36	33	31	42	40	24	-7.8
	DWT	5,267	5,914	5,743	7,936	6,893	4,475	-3.2
	GRT					4,044	2,741	NA
Bulk Carriers	- Number	8	5	10	12	5	10	4.6
	DWT	1,046	1,017	1,125	969	552	566	-11.6
	GRT					355	364	NA
Freighters	- Number	39	44	24	18	15	40	0.5
	DWT	515	615	394	220	248	734	7.3
	GRT					171	543	NA

Exhibit VII-15
Fleet Operations (continued)
Country: France

	1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Share of National Trade (percent)[f]							
Imports	NA	29.8	32.0	30.1	28.9	33.6	3.0[d]
Exports	NA	22.9	24.6	22.2	22.7	24.1	1.3[d]
Reported Financial Results (millions of dollars)							
Revenues	NA	NA		1,521	1,943	NA	NA
Profits	NA						
Outstanding Debt	NA						
Employment[e]							
Nationals	25,514	25,337	21,928	NA	18,597	NA	NA
Total	26,104	25,850	22,710	NA	18,858	17,133	-8.1

[a] Includes Combination Passenger/Cargo Vessels not shown separately.

[b] Source: Merchant Fleets of the World, Maritime Administration, U.S. Dept. of Commerce, semi-annual.

[c] Source: New Ship Construction, Maritime Administration, U.S. Dept of Commerce, annual.

[d] 4-year annual growth rate, 1971-1975.

[e] Source: Maritime Transport, Organization for Economic Cooperation and Development, annual.

[f] Source: Exhibit II-14.

Under Plan VI covering 1971-1975, France achieved a 71 percent growth in grt and a 96 percent growth in dwt compared to world growth rates of 58 percent and 70 percent, respectively.

Plan VII continued the high priority on the expansion of the containership fleet and Ro/Ro fleet by assigning the maximum equipment grant percentage (15 percent) to these types of vessels. The French containership fleet had only seven vessels in 1975, but six were delivered in the first half of 1976 and 35 more are on order for delivery before 1978. This sector of the fleet will have at least 48 ships and more than one million dwt in operation by the end of 1978. The Plan VII constructions involve an investment program of $5.2 billion covering 1975-1980 including $933 million for containerships.

The current targets for the French fleet established under Plan VII involve growth in tonnage of the tanker fleet by 47 percent from the end of 1975 to the end of 1980. The bulk carrier fleet is scheduled to grow by 113 percent during the same period, and the freighter fleet by 49 percent. Exhibit VII-16 presents the 1976-1981 planned expansion of the French-flag fleet while Exhibit VII-17 outlines projected subsidy expenditures.

As shown in Exhibit VII-18, Plan VII as of September 15, 1976 called for orders of 166 vessels of 7.845 million grt. The estimated subsidy level of $233 million is applied to each of the vessel types as shown in Exhibit VII-17.

The 7.845 million grt of planned orders would yield about 18 million grt without deletions from the fleet between 1975 and 1980. Thus, Plan VII would appear to call for 5.7 million grt of growth and about 2.1 million grt of replacement tonnage.

Exhibit VII-19 shows the division of current orders between French shipyards and foreign yards. The gross registered tonnage ordered has been equally divided between France and other countries. The French shipyards' share of gross tonnage delivered to the French

Exhibit VII-16

PLANNED GROWTH OF THE FRENCH FLAG FLEET

(GRT in millions)

	Tonnage Jan. 1, 1976	Planned Tonnage Jan. 1, 1981	5-Year Growth 1976-1981	5-Year Growth 1970-1975
Passenger	0.22	0.20	-	n/a
Tankers	6.92	10.20	47%	105%
Bulk Carriers	1.41	3.00	113%	73%
Freighters	1.74	2.60	49%	10%
Total	10.29	16.00	55%	71%

Source: La Construction Navale, Chambre Syndicale des Constructeurs de Navires et de Machines Marines, Rue de Monceau, 75008 Paris, June 1976, p. 77.

Exhibit VII-17

ESTIMATE OF PLAN VII SUBSIDY

(millions of dollars)

Ship Type	Planned Value	Subsidy Rate	Amount
Container	933	15%	145
Cargo Ship	346	10%	35
Dry Bulk	1,361	1-8%	53*
Subtotal	2,640		233
LPG/LNG	1,073	0	0
Tanker	1,656	0	0
Products Tankers	0	3%	0
Total	5,369	N/A	233

*Average of 4 percent; the average size of planned dry bulk vessels is approximately 66,000 dwt.

Source: Exhibits VII-16 and VII-18.

Exhibit VII-18

OBJECTIVES AND CURRENT ACHIEVEMENTS TO DATE OF THE DEVELOPMENT PLAN OF THE FRENCH MERCHANT FLEET AS OF SEPTEMBER 15, 1976

	Objectives			Achieved (Ordered and/or Delivered)			
Type of Ship	Number	GRT	Value ($ millions)	Number % of Plan	GRT % of Plan	Value ($ millions) % of Plan	Subsidy ($ millions)
Container and RoRo	38	520,000	933	61 160.5%	809,569 155.7%	1,310 140.1%	192
Cargo Liners	33	450,000	346	1 3.0%	499 0.1%	3 0.9%	.3
Dry Bulk	53	2,050,000	1,362	17 32.1%	424,613 20.7%	309	16
Passenger				2	430	17	
LPG/LNG	12	625,000	1,073	3 25.0%	122,000 19.5%	156 14.5%	
Tanker	30	4,200,000	1,656	11 36.7%	1,902,000 45.3%	631 38.1%	
Total	166	7,845,000	5,370	95 57.2%	3,259,111 41.5%	2,426 45.2%	209
Ships Delivered Between November 1, 1974 - December 1, 1975				13	61,093	64	4 213

Source: Secretariat general de la Marine marchande, as published in Marine Marchande 1976.

Exhibit VII-19

DIVISION OF CURRENT ORDERS BETWEEN FRENCH YARDS AND FOREIGN YARDS AS OF SEPTEMBER 15, 1976

	Ordered in France			Ordered from Foreign		
Type of Ship	Number % of Total	GRT % of Total	Value ($ millions) % of Total	Number % of Total	GRT % of Total	Value ($ millions) % of total
Container and RoRo	35 57.4%	432,584 53.4%	843 64.4%	26 42.6%	376,985 46.6%	467 35.7%
Cargo Liners				1 100.0%	499 100.0%	3 100.0%
Dry Bulk				17	424,613 100.0%	309 100.0%
Passenger	2 100.0%	430 100.0%	17 100.0%			
LPG/LNG	2 66.7%	110,000 90.7%	131 84.3%	1 33.3%	12,000 9.4%	25 15.7%
Tanker	4 36.4%	1,112,000 58.5%	384 60.9%	7 63.6%	790,000 41.5%	247 39.1%
Total	43 45.3%	1,655,014 50.8%	1,376 56.7%	52 54.7%	1,604,097 49.2%	1,050 43.3%
Ships Delivered Between November 1, 1974 - December 1, 1975				13	61,093	64

Source: Secretariat general de la Marine marchande, as published in Marine Marchande 1976.

fleet was 57 percent during the 1971-1975 period. Thus, the French yards' share of current orders is below the average of the past five years but above the 35 percent and 42 percent shares of deliveries during 1974 and 1975, respectively.

A greater percentage of the value of orders has been ordered from French yards (57 percent of total value ordered) and an even greater percentage of the subsidy dollars. Based on the subsidy figures shown in Exhibit VII-18, it is estimated that 60 percent, or $126.5 million of the $213 million committed will be applied to orders from French shipyards.

Exhibit VII-19 also shows the orders for French flag vessels as of September 15, 1976. Approximately 3.3 million grt has been ordered, or 42 percent of the planned tonnage under Plan VII. However, due to the pattern of ordering, with orders for containerships at 156 percent of planned grt, $213 million in subsidies have already been committed. Thus, without an increase in the level of subsidy or a reallocation of the subsidy dollars, the growth of the French fleet will fall far short of plan on a gross tonnage basis. If the deletions from the fleet occur at the level of 2.1 million grt, the net growth might not exceed 10-15 percent over the next five years, as opposed to the planned growth of 55 percent and the previous five year growth of 71 percent. As a result of these developments, the amount of subsidy programmed for Plan VII was increased during 1976 from $233 million to $280 million.

C. AIDS TO THE FRENCH SHIPBUILDING INDUSTRY

1. Aid Programs

The government goals for the French shipbuilding industry were formulated from the results of a government study conducted to assess the situation of the shipbuilding sector. The study, conducted by an inter-Ministerial Commission, was completed in 1967 and a contract between the government and the shipbuilding industry was signed in 1968 setting a ceiling on the volume of production to be subsidized and establishing a program to consolidate and streamline the industry. Ultimately, independent shipyards would be merged or phased out until two large shipbuilding groups remain. Under this policy, the number of large yards being subsidized has been reduced from fourteen to five.

The principal aid programs employed by the French government to assist shipyards within the above policy guidelines are shown in Exhibit VII-20.

As discussed in Section A, a high proportion of the French shipbuilding output over the study period has been ordered by the French national fleet, but a definite trend towards a higher proportion of exports has appeared. Simultaneously, the French fleet has sought vessels from other shipbuilding countries.

Licenses for the importation of ships by French shipowners are required, but the program has been greatly liberalized since 1969 and currently serves as more of a statistical control than a preference program.

a. Principal Aids to the French Shipbuilding Industry

(i) Investment Financing Assistance

There are no special programs for investment financing assistance in France. Low interest loans had been made available during the 1960s to finance the development and conversion of the yards. In addition, a program providing 20 percent grants for the rededication

Exhibit VII-20

OUTLINE OF PRINCIPAL ASSISTANCE PROGRAMS TO THE FRENCH SHIPBUILDING INDUSTRY 1970-1975

i. Investment Financing Assistance

ii. Credit Assistance

Program 1 - Export Credits

iii. Tax Allowance Programs

Program 2 - Custom Duty Exemption
Program 3 - VAT Exemption

iv. Direct Subsidies

Program 4 - Construction Subsidies

v. Preference Programs

vi. Government Ownership

vii. Other

Program 5 - Inflation Insurance
Program 6 - Reorganization of Shipyards

of smaller shipyards into other industries has been in effect since 1960. These programs have had relatively little impact upon French shipbuilding capacity during the study period. The grant program is discussed further in a later section.

(ii) Credit Assistance

Program 1 - Export Credits

Export credit assistance is provided to permit yards to offer credit to foreign customers at favorable terms. Prior to 1970, the French Foreign Trade Bank provided export credits. Since the adoption of the OECD agreement on export credit for ships, export credits are supplied from private banks with the support of government institutions, e.g., Credit National or Banque de France, at terms in accordance with the OECD agreement. As amended on July 1, 1974, the OECD agreement calls for credits to have a maximum term of seven years, minimum down payment of 30 percent, and minimum interest rate of 8 percent including fees. All export credits of more than two years duration must be insured by Compagnie Francaise de 'Assurance pour le Commerce Exterieur, (COFACE) a government agency.

The value of exports by the French shipbuilding industry can be estimated conservatively at $300 to $400 million per year over the study period. With 80 percent financing and a 2 percent interest differential between market loans and government loans, the benefit of this program can be estimated at between $30 and $40 million per year.

(iii) Tax Allowance Programs

Program 2 - Customs Duty Exemptions

French tax laws provide for exemptions from customs duty on shipbuilding materials listed under items 89.01, 89.02, and 89.03 of the common customs tariff, whether used in ships for export or for domestic delivery. This benefit is common to nearly all shipbuilding nations.

Program 3 - VAT Exemptions

Ships, whether built for domestic delivery or export are exempt from Value Added Tax. As discussed previously, it is a matter of some controvery whether this exemption should be considered a subsidy to shipyards.

(iv) Direct Subsidies

Program 4 - Construction Subsidies

Construction subsidies are provided for vessels built in French shipyards, whether for domestic owners or for export. These subsidies are lump sums based on a percentage of the contract price of a ship and were originally intended to equalize the costs of French-built vessels and foreign-built vessels. The subsidy percentage of the vessel's contract price has declined from 21 percent in the 1960s, to 10 percent in 1968, then to 4.9 percent in 1970, 0.5 percent in 1974, and zero in 1976.

The French budget for the Marine Marchande provides summary data for aids to the shipyards, aggregating the construction subsidies and the French inflation insurance program. Only partial data on the construction subsidies are available. Exhibit VII-21 summarizes the total authorizations and expenditures for the two programs. Also shown are the announced and estimated construction subsidy amounts and the inflation insurance amounts.

As construction subsidies decreased, the inflation insurance expenditures increased rapidly. The decreasing construction subsidies as a percent of value of construction lag the changes in the percentage of construction subsidy in effect as a result of the lag between contracts and deliveries. Construction subsidies declined from an estimated 8.8 percent of the value of deliveries in 1970 to 2.9 percent in 1975.

Exhibit VII-21

FRENCH CONSTRUCTION SUBSIDIES AND INFLATION INSURANCE APPROPRIATIONS AND EXPENDITURES

1970-1975

(millions of dollars)

	1970	1971	1972	1973	1974	1975
Total Appropriated	63.9	94.5	119.9	164.7	163.3	186.6
Construction Subsidies	40.6	35.9	33.1	30.3[e]	28.0	25.7[e]
Inflation Insurance Expenditures	20.1	46.9	76.5	114.8[e]	148.1	178.5[e]
Total Expenditures	60.7	82.8	109.7	146.1	176.1	199.5

[e] estimated

Source: Budget Vote De 1970 (1971-1975). Transports, IV Marine Marchande, Imprimerie Nationale, Paris.

According to the OECD agreement on elimination of direct shipbuilding subsidies, programs such as the French percentage construction subsidy were to be phased out. The small percentage granted during 1974-1975 and the complete elimination of the program in 1976 brought the French into compliance with the spirit of the agreement although the 0.5 percent grants were not technically permitted by the terms of the agreement.

As the construction subsidy program was being phased out, the inflation insurance program was increasing in importance. Between 1970 and 1975 the inflation insurance, which is discussed in a later section, increased from $20.1 million to a level of $178.5 in 1975, representing 20.3 percent of the estimated value of deliveries in 1975.

(v) Preferences

As discussed earlier, licenses for imports of ships are required, but the program is currently used primarily for statistical purposes. Prior to 1969, the program was more strictly applied to control imports. Since that time an increasing proportion of French flag vessels have been purchased from foreign yards, including vessels receiving equipment grants and vessels ordered by the government-owned CGM. As a result, there are no significant programs of preference to support French shipbuilding.

(vi) Government Ownership

There is no government ownership of French shipbuilding capacity.

(vii) Other

Program 5 - Inflation Insurance

Insurance is provided to shipyards against inflation in shipbuilding costs that exceeds a set threshold. This has permitted yards to quote fixed-price contracts, since much of the inflation risk on the long lead-time contracts is absorbed by the government.

The inflation insurance scheme is administered by the Ministry of Transport and is similar to the inflation insurance for general export contracts administered by Compagnie Francaise de'Assurance pour le Commerce Exterieur. For the purpose of the inflation insurance program, all ship deliveries qualify as exports, whether for domestic owners or for export.

For the 1970-1975 period, government expenditures under this program have totaled an estimated $584.2 million (Exhibit VII-21), although these payments have generally been delayed, with many yards experiencing waits of two to three years in receiving compensation due under this program.

Inflation insurance enabled French shipbuilders to offer contracts in fixed prices which they believe improved their ability to obtain orders during the early 1970s. Inflation in France, as elsewhere in the world, rose sharply in the early part of the decade from 5.4 percent in 1971 to 7.4 percent in 1973 and 13.6 percent in 1974. The rate has declined since then to 11.7 percent in 1975 and 9.7 percent in 1976. Because the inflation insurance guarantees cost increases in excess of a fixed amount, currently 7.3 percent, the benefit of the program to French shipyards has dramatically been reduced as the rate of inflation has declined. French inflation is expected to continue at its current rate of 8 percent through 1977 and rise to an average of 10.5 percent through 1980. Under these conditions the value of the guarantee program then will be negligible in obtaining new shipbuilding orders during 1977 and of only marginal value through 1980, assuming that the basis is not lowered from 7.3 percent.

Program 6 - Reorganization of Shipyards

The French government supports a program for conversion of shipyards to other industrial activities and retraining of shipyard employees for other industries. Investment grants up to 20 percent of the cost of equipment have been available under the Decree of

October 27, 1960 for the purpose of converting small- and medium-sized shipyards to other industrial activities. The goal of the program was to streamline the shipbuilding industry into a smaller number of highly efficient yards without causing massive layoffs from the small- and medium-sized yards. Restructuring was responsible for converting approximately 17,000 jobs in the 1960s, but some layoffs did take place. Expenditures have been considerably smaller during the study period.

b. Benefits of Aid Programs

Direct assistance to the French shipbuilding industry has increased significantly over the study period. As the construction subsidy program was scaled down, the inflation insurance program greatly increased the liabilities of the French government. Total assistance rose from $95.7 million in 1970 to $239.2 million in 1975 (Exhibit VII-22).

The French program of assistance to the shipbuilding industry has been a combination of export credit (interest subsidy), direct construction subsidy and an inflation insurance program. These combined aids have expanded to levels far in excess of the construction subsidies which were phased out.

2. Effectiveness of Aids to the French Shipbuilding Industry

Although some consolidation of the majors in the French shipbuilding industry was accomplished with the encouragement of the government's shipbuilding policy and aid programs, the total output from French yards did not decline appreciably during the 1970-1975 period. Since world shipbuilding capacity was growing, however, the French shipyards' share of world's output in terms of deadweight tonnage declined from a high for the six year period of 4.6 percent in 1971 to a 3.1 percent share in 1975. (Exhibit VII-23)

Exhibit VII-22

SUMMARY OF BENEFITS TO THE FRENCH SHIPBUILDING INDUSTRY

1970-1975
(millions of dollars)

	1970	1971	1972	1973	1974	1974
Program 1: Export Credit	35.0	35.0	35.0	35.0	35.0	35.0
Program 4: Construction Subsidies	40.6	35.9	33.1	30.3	28.0	25.7
Program 5: Inflation Insurance	20.1	46.9	76.5	114.8	148.1	178.5
Subtotal	95.7	117.8	144.6	180.1	211.1	239.2

Exhibit VII-23

FRENCH SHARE OF WORLD DELIVERIES
(1970-1975)

Year	Deliveries from French Shipyards (millions of DWT)	French Shipyards' Share of Deliveries from World Shipyards (%)
1970	1.36	3.9
1971	1.83	4.6
1972	1.62	3.7
1973	2.04	3.9
1974	1.98	3.3
1975	1.86	3.1

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce.

The government's aid programs, in addition to encouraging consolidation of shipbuilding capacity, encouraged French yards to become more specialized so that they might improve their competitiveness in the world shipbuilding market. French yards successfully attracted orders for large tankers, liquefied gas carriers, and containerships during the 1970s and, as a result of this specialization, became more dependent on export orders as the 1970-1975 period progressed. The French fleet, although expanding faster than the world fleet, took decreasing percentages of its new tonnage from domestic shipyards in the 1970s. The French fleet took deliveries from domestic yards in 1970-1972 that accounted for 76 percent of the total deadweight delivered to the French fleet during that period. In 1973-1975, deliveries from French yards declined to 44 percent of total deadweight delivered to the French fleet.

The French shipyards' declining share of the domestic fleet's requirement for new tonnage was offset somewhat by an increase in export orders. Trends in deliveries from French shipyards to domestic and foreign owners are summarized in Exhibit VII-24.

For future delivery, 52 percent of the deadweight tonnage under construction or on order in French shipyards at the end of 1975 was for foreign owners.

The backlog at the end of 1974 stood at 8.9 million dwt, 4.5 times the annual rate of deliveries achieved in that year. The cancellations eliminated approximately one year's work from the French yards' backlog and since new orders during 1975 represented only 0.7 years additional work for the orderbook, the end-1975 orderbook fell to the equivalent of 3.5 years work at 1975 rates of delivery based on deadweight tonnage.

The combination of specialized vessel production, direct construction subsidies, and the inflation insurance, which provided the ability to offer fixed price contracts, has been important in the development

Exhibit VII-24

DELIVERIES FROM FRENCH SHIPYARDS

1970-1975

	1970	1971	1972	1973	1974	1975
Tonnage (millions of DWT)						
Total Deliveries by French Shipyards	1.36	1.83	1.62	2.04	1.98	1.86
--for the French Fleet	0.82	1.72	0.75	1.24	1.10	0.65
--for Export	0.54	0.11	0.87	0.80	0.88	1.21
Shares of French Shipyards' Output (percent)						
Total Deliveries by French Shipyards	100	100	100	100	100	100
--for the French Fleet	60	94	46	61	55	35
--for Export	40	6	54	39	45	65

Source: New Ship Construction, Maritime Administration,
U.S. Department of Commerce, annual.

Exhibit VII-25

FOREIGN MARITIME AIDS

MEASURES OF MARITIME ACTIVITY

SHIPBUILDING

Oceangoing Vessels of 1,000 Gross Tons and Over
(DWT and GRT in Thousands)

Country: France

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
				Deliveries[d]				
Total Ships[c]	- Number	27	24	23	25	19	27	0.0
	DWT	1,363	1,829	1,620	2,041	1,982	1,855	6.4
	GRT	798	1,053	928	1,164	1,093	1,190	8.3
Tankers	- Number	7	12	6	12	11	17	19.4
	DWT	1,141	1,398	1,218	1,733	1,765	1,759	9.0
	GRT	567	765	630	963	964	1,095	14.1
Bulk Carriers	- Number	0	2	1	1	1	0	-100.0[a]
	DWT		288	158	161	158	0	-100.0[a]
	GRT		158	86	76	76	0	-100.0[a]
Freighters	- Number	20	10	16	11	7	9	-14.8
	DWT	222	143	244	145	59	95	-15.6
	GRT	231	130	212	114	52	86	-17.9
				Orders During Year[e]				
Total Ships[c]	- Number		14	5	19	43	45	33.9[a]
	DWT		1,862	1,037	3,102	2,509	1,370	-7.4[a]
	GRT							NA
Tankers	- Number		14	2	15	30	16	3.4[a]
	DWT		1,810	974	3,072	2,169	995	-13.9[a]
	GRT							NA
Bulk Carriers	- Number		0	0	0	0	0	NA
	DWT		10	5	8	5	0	-100.0[a]
	GRT							NA
Freighters	- Number		0	6	3	13	24	53.7[b]
	DWT		42	58	20	334	367	71.9
	GRT							NA
				Cancellations During Year[f]				
Total Ships[c]	- Number	1	2	2	0	1	14	69.5
	DWT	295	15	53	0	57	1,988	46.5
	GRT							NA
Tankers	- Number	1	0	1	0	1	14	69.5
	DWT	295	0	50	0	57	1,988	46.5
	GRT							NA
Bulk Carriers	- Number	0	0	0	0	0	0	NA
	DWT	0	0	0	0	0	0	NA
	GRT							NA
Freighters	- Number	0	2	1	0	0	0	NA
	DWT	0	15	3	0	0	0	NA
	GRT							NA

Exhibit VII-25
Shipbuilding (continued)

Country: France

		1970	1971	1972	1973	1974	1975	5-Year Annual Growth Rate
Orders Outstanding at Year-End[d]								
Total Ships[c]	- Number	103	91	71	65	88	92	-2.2
	DWT	8,005	8,023	7,387	8,448	8,918	6,445	-4.2
	GRT					5,890	4,428	NA
Tankers	- Number	50	52	43	46	64	49	-0.4
	DWT	6,644	7,056	6,762	8,101	8,448	5,696	-3.0
	GRT					5,570	3,896	NA
Bulk Carriers	- Number	5	3	2	1	0	0	-100.0
	DWT	737	459	306	153		0	-100.0
	GRT						0	NA
Freighters	- Number	48	36	26	18	24	39	-4.1
	DWT	624	508	319	194	469	741	3.5
	GRT					320	511	NA
Reported Financial Results								
Revenues[g]		462	642	593	782	771	881	NA
Profits								
Outstanding Debt								
Employment								
Employees at Year-End								
Major Yards		21,233	21,098	22,884	23,495	24,330		3.5[h]
Smaller Yards		4,000	4,000	5,000	5,000	5,000		5.7[h]
Total		25,233	25,098	27,884	28,495	29,330	approx. 30,000	3.5

[a] 4-year annual growth rate, 1971-1975.

[b] 3-year annual growth rate, 1972-1975.

[c] Includes Combination Passenger/Cargo vessels not shown separately.

[d] Source: New Ship Construction, Maritime Administration, U.S. Dept. of Commerce, annual.

[e] Source: Derived from orders outstanding, deliveries, and cancellations. Approximate due to timing differences in sources.

[f] Source: Fairplay International Shipping Weekly, World Ships on Order, quarterly.

[g] Estimated from gross registered tonnage delivered.

[h] 4-year annual growth rate, 1971-1975.

of the current backlog and relatively strong levels of orders and deliveries over the period. At the same time the decreasing relationship between the French national fleet and the shipbuilding industry indicates the recent strength of the industry has been built on an export base.

3. Recent and Prospective Programs

The French shipyards' share of new orders placed worldwide fell in 1975 to 2.3 percent of gross tonnage ordered, down from the 3.7 percent average in 1971-1974 and a sharp drop from the 8.4 percent achieved in 1974. Since total orders placed worldwide in 1975 were less than half the gross tonnage ordered in 1974, the drop in order volume was even more severe than indicated by the decline in share of orders from 8.4 percent to 2.3 percent.

French shipyards, like other West European yards, faced severe Japanese price competition in 1975 and 1976. Of the 0.55 million grt of new orders by the French fleet in 1975, less than one-third went to French shipyards while Japanese yards captured more than 50 percent.

The French government expressed confidence in mid-1975 that the larger French shipyards could survive the current slump in world shipbuilding because the government's stated goal for expanding the French shipping industry was expected to provide enough work to guarantee employment for 24,000 personnel in the major yards. By April of 1976 orders had dropped to less than two years work, down from the 3.5 years work at the end of 1975.

The goals of Plan VII involved an expansion of the French fleet to 16 million grt by 1980 and included vessels aggregating at least 7.8 million grt to be delivered to the French fleet during the next five years. The French fleet totaled 10.3 million grt at the end of 1975, up from 6.0 million grt at the end of 1970. New vessels from French shipyards accounted for 3 million grt of the 5.5 million grt delivered to the French fleet from 1971 to 1975. If the domestic yards maintain this 54 percent share of the French fleet's new tonnage for 1976-1980, the deliveries to the French fleet will require at least 4.2 million grt of the yards' output over the five years. This demand for approximately 6.5 million dwt over five years represents 65 percent of French capacity. If this share changes for the 1976-1980 period or if the total volume of deliveries to the French fleet changes, the figure for French yards' deliveries would, of course, change accordingly.

As of September 1976, orders for the French flag were 3.3 million grt of which only 1.7 million had been ordered in France. The resulting shortage of domestic orders requires exports to reach three times current domestic volume to maintain French shipyard output levels. This would require a 50 percent increase in export orders over the next five years.

The cancellation situation appears to have stabilized for French yards in 1976. Cancellations of 0.57 million deadweight were recorded in February 1976 through January 1977 compared to 2 million dwt cancelled between November 1974 and October 1975. Two VLCCs of 278,000 dwt each for the Arab Maritime Petroleum Transport Company (AMPTC) accounted for almost all of the tonnage cancelled and these were replaced on the orderbook by two 75,000 cubic meter LPG vessels. The announcement of the change stressed that it was part of AMPTC's "responsible approach" to world tanker overtonnaging.

The French government continued to abide by the OECD guidelines on direct subsidies to the shipbuilding industry. State subsidies for naval construction were suppressed at the beginning of 1976 in advance of OECD recommendations on the elimination of aids of this type. However, a French cabinet decision of December 15, 1976 approved the intent of anti-recession aids to shipbuilding that included a 10 percent export building subsidy for France's small shipyards.

Like Norway, the French government sought to develop areas of shipbuilding foreign aid. In a unique action the government decreed that only when a price difference of 10 percent existed, could French orders be placed abroad. This amounts to 25 percent when the benefit of the 15 percent subsidy is included and would better preclude the ordering of vessels abroad than the German 17.5 percent subsidy.

The recession in world shipbuilding demand shook the orderly development of France's shipbuilding industry more than the fleet. Specializing in sophisticated dry cargo, LNG and Ro/Ro tonnage, the French shipyards have lost any competitive advantages as shipbuilders of Japan and Korea worked out of tanker and bulk carrier orders and successfully secured the great majority of recent orders for the tonnage French shipyards had previously produced.

The 25,000 workers in the major French yards have work until early 1978 at which time additional orders from the French fleet are expected. Despite the role of the government, the major yards are expected to act according to their orderbooks and opportunities. For most, this means specialization and export emphasis that will alter the course of French shipbuilding away from that of the fleet.

Nine smaller French yards, which are not included in the government's rationalization proposals for combining the five major yards into two groups, employed an additional 4,500 workers at mid-1975. These yards were expected to undergo similar strengthening and rationalization efforts but no formal government programs existed for this purpose until December 1976, when the French Cabinet decided to provide special financial aid to eight small shipyards who are important employers in their regions due to their shortened orderbooks. As noted above, the aid took the form of 10 percent export and 15 percent domestic construction subsidies and was included in the National Budget.

With recent declines in the inflation rate, and the lower levels of construction subsidies, the French shipbuilding industry will be receiving greatly reduced levels of assistance over the rest of the decade.

The industry, which has benefited from investment financing assistance, rationalization programs leading to specialization of production, construction grants and inflation protection can look to a portion of its future orderbook being filled from the continued development of the French fleet. The remainder will have to be based on the competitiveness of the industry resulting from the prior rationalization and specialization.

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APPENDIX A

EASTERN BLOC MARITIME ACTIVITY

OVERVIEW

The activity of the Council of Mutual Economic Aid (COMECON) nations in shipbuilding and shipping affects all developed nations' maritime industries primarily through competition in relatively free markets at low prices. Such activity is exemplified by the leadership of the Soviet Union in shipping and Poland in ship construction.

A. RUSSIAN SHIPPING AND ITS EFFECT ON MARITIME NATIONS

1. General Cargo Fleet

The Russian fleet underwent enormous expansion in the 1950s and 1960s, principally through the addition of general cargo tonnage and small bulk carriers. The goals of fleet expansion were the capacity to earn badly needed foreign currency, the flying of the Russian flag throughout the world, and the strategic objective of complementing the Soviet Navy with fishing vessels, scientific and training ships, and merchant vessels. This latter objective was facilitated by the use of low paid paramilitary crews earning far less than seamen in the West. Between 1962 and 1967 cross trading expanded from 1.9 million tons to 15.7 million tons per year. The expansion of the Soviet fleet prior to the study period is summarized in Table A-1.

Table A-1

SOVIET FLEET SUMMARY

Year	Number of Vessels	Gross Tons	% World
1950	967	2,124,823	2.5
1955	1,158	2,505,850	2.5
1960	1,138	3,429,472	2.6
1965	1,845	8,237,487	5.1
1970	5,924	14,831,775	6.5

Source: Lloyds Register of Shipping, Statistical Tables, 1971. All vessels over 100 gross tons.

From this table the rapid expansion of the Soviet fleet in the 1960s is evident. The relative sizes of the Soviet inland and ocean fleets is shown in Table A-2.

Table A-2

SOVIET FLEET COMPOSITION

1970

	Number of Vessels	Gross Tons
Vessels 100 - 999 grt	3,982	3,509,775[a]
Vessels Greater than 1,000 grt	1,942	11,322,000[b]
Total Fleet	5,924	14,831,775[a]

---

[a] Lloyd's Statistical Tables, 1971.

[b] Merchant Fleets of the World, 1970 Maritime Administration, U.S. Department of Commerce.

The oceangoing Soviet fleet in 1970 was composed of 1,942 vessels with an average gross tonnage of 5,831 and deadweight of 7,364. As compared to a world average of 10,581 grt and 16,366 dwt, the Soviet fleet was then composed of small general cargo vessels, few bulk vessels and no container or roll-on/roll-off tonnage. While the Russian fleet comprised only 6.5 percent of world gross tonnage, her fleet of freighters comprised 8.8 percent of the world fleet.

The Russian fleet sought stability and year round work, free from the seasonal restrictions of many of Russia's ice-bound ports. The number of liner routes served by the Soviet fleet increased from 33 in 1970 to 126 by mid-1976. Primary targets were the Japanese, European and U.S. routes over which conferences prevailed, employing sophisticated and costly tonnage manned by highly paid crews. The Russians countered with low undercutting rates, accepting cargos aboard general cargo vessels at first and later aboard sophisticated and highly specialized liners. Table A-3 tracks the recent expansion of the Soviet general cargo fleet relative to the world fleet and the fleets of the six major maritime countries included in this study.

Table A-3

SOVIET GENERAL CARGO FLEET

1970-1975

Year	Number of Vessels	Deadweight	% World	% Six Nations
1970	1,416	8,289,000	8.5%	26.2%
1971	1,518	8,804,000	9.0	28.0
1972	1,561	9,061,000	9.2	30.5
1973	1,663	9,707,000	9.7	35.3
1974	1,753	10,323,000	10.0	41.1
1975	1,794	10,737,000	10.2	42.0

Source: Merchant Fleets of the World, 1970-1975. Maritime Administration, U.S. Department of Commerce.

Data includes passenger and refrigerated tonnage.

The Soviet fleet of general cargo, passenger, refrigerated and combination dry cargo vessels expanded at a rate of 5.3 percent, while the fleet of the six nations studied contracted on a tonnage basis. The world fleet of general cargo vessels expanded by some 1.5 percent per year and 7.5 million dwt, with Russian vessels accounting for one-third of this expansion. By 1975 the Soviets operated the world's largest freighter fleet.

In recent years the Soviets have added container and roll-on/roll-off tonnage to their fleets to better compete on the basis of service with Western operators. To compete with foreign containership capacity, the Soviets converted general cargo vessels into semi-container vessels and in 1975 operated the world's largest fleet of such ships, the fourth largest fleet of roll-on/roll-off vessels and seventh largest fleet of containerships. These moves pitted the Soviets with the key interests of traditional maritime and western industrial nations, whose liners have long operated between the few well-developed containerized routes of the Pacific and the Atlantic.

In 1970 FESCO, one of the most aggressive Soviet liner companies, did not list any sailings from U.S. ports. By mid-1976, FESCO made 11 sailings per month from U.S. West Coast ports and six sailings per month from U.S. Atlantic and Gulf ports to the Far East. The line had developed a fleet of vessels amounting to 40 percent of the capacity of the six Japanese lines serving the Japanese-U.S. market. Such cross-trading activity erodes the ability of conference vessels to compete for cargos and directly affects the viability of Western shipping. Of the 29 sailings and hundreds of Pacific port calls the Soviet fleet lists each month, only six calls are made at Russian ports. Thus, the year-round effect of Russian cross trading represents a direct challenge to free world shipping.

Not only the Japanese have been hard hit but nearly all study nations were affected by Russian competition. The Swedish and German fleets have suffered on short sea Baltic runs as older low-cost Soviet vessels undercut any rate. The German shipping community has led the commercial response to Russian freight rate undercutting and dumping, but all nations appear to have trade interests that impact the considerations of their fleets.

2. Bulk and Tanker Fleets

The future development of the Russian bulk fleet could represent an even greater challenge in a market that enjoyed near-free market conditions into the mid-1970s, when the prospects of cargo preference caused certain independent and oil fleet operators to react to the possibility of OPEC fleets. In 1970 the average size of Soviet bulk vessels was 6,400 dwt and the size of the average tanker was 13,114 dwt. These figures compare to world averages of 26,125 dwt and 36,171 dwt, respectively. Table A-4 traces the development of the Soviet dry and liquid bulk fleet.

Table A-4

SOVIET BULK AND TANKER FLEETS

1970 and 1975

Year	Number of Vessels	Total Deadweight	% World	% Six Nations
Bulk Fleet				
1970	132	846,000	1.1%	2.2%
1975	148	1,652,000	1.1	2.5
Tanker Fleet				
1970	394	5,167,000	3.4	7.8
1975	462	5,861,000	1.9	4.9

Source: MarAd, Merchant Fleets of the World, 1970-1975.

Table A-4 shows the relatively modest expansion of the Soviet dry bulk fleet relative to the six maritime nations and the relative decline in the Soviet share of world tanker tonnage. As a minor net exporter of energy by sea, the Soviets had little reason to expand the tanker fleet until the prospects of major energy exports appeared in the mid-1970s. The Soviet's doubling of the dry bulk fleet was an attempt to minimize the effects of the $1 billion grain shipment deficit with the U.S. These shipments accounted for one-fifth of Russia's $5.5 billion trade deficit with the West in 1975.

3. Soviet Fleet Expansion Plans

The Party Congress of February 1976 set forth the expansion plans of the Soviet Fleet as described in Exhibits A-1 and A-2. Declines in the breakbulk fleet will be offset by the addition of highly efficient container, roll-on/roll-off, and LASH vessels. These fleets will increase by 360 percent to 566,000 dwt. The dry bulk fleet will increase by 50 percent by 1981, while Soviet orders for Ro/Ro and container tonnage account for 11 percent of world orders.

The Soviet tanker fleet will expand by 41 percent or some 2.3 million deadweight, all in Panamax size vessels and larger while small tankers will become a smaller portion of the Soviet fleet.

4. Soviet Maritime Aids

Because of the nature of the Soviet centralized economy, the nature of aids to the maritime industries are difficult to identify. It has been recognized that allocation of direct, overhead, and indirect costs, the levels of return and costs of capital are very different in the Soviet merchant marine from the norms of the free world.

Exhibit A-1

EXPECTED DEVELOPMENT OF THE SOVIET FLEET*

(dwt in thousands)

Ship Type	January 1976	January 1981	Net Change dwt	Net Change % Annual Change	Vessel/dwt
Soviet Fleet Composition					
Breakbulk	6,484.2	6,218.8	(265.4)	(265.4)	
Reefers	127.1	142.1	15.0	2.3	
Others	33.7	43.6	9.9	5.3	
Ferries	27.0	49.7	22.7	13.0	
Timber Carriers	1,832.5	2,075.1	242.6	2.5	
Soviet Fleet Expansion					
Orders Outstanding Jan. 30, 1976					98/580.0
Additional Expansion:					
Ro/Ro	89.2	289.4	200.2	26.5	33/482.9
Container	68.3	198.3	130.0	23.8	
Lash	n/a	78.4	78.4	n/a	2/73.2
Bulk Carriers	973.7	1,616.8	643.1	10.7	26/424.0
Tankers	5,471.4	7,728.5	2,257.1	7.2	44/2,530.0
Combined Carriers					5/558.0
Total	15,107.3	18,440.7	n/a	n/a	208/4,648.1

*As of January 1976, Soviet Fleet	-	15,107.3
Expansion of Soviet Fleet, 1976-1980	-	4,648.1
Total	-	19,755.4
Less Scrapping		1,314.7
Expected Size as of January 1981	-	18,440.7

Sources: Seatrade, Soviet Shipping and Lambert Brothers, Russian Shipping.

Exhibit A-2

CHANGING COMPOSITION OF RUSSIAN FLEET
(Does not Include Fishing Vessels)
January 1976-January 1981

	% of Total Fleet by Type		
	January 1976	January 1981	Net Change
Dry Cargo Fleet			
Breakbulk	67.3	58.1	(9.2)
Ro/Ro	1.0	2.7	1.7
Containership	0.8	1.8	1.0
Lash	n/a	0.7	0.7
Ferry	0.2	0.5	0.3
Bulk	10.1	15.1	5.0
Timber	19.0	19.4	0.4
reefers	1.3	1.3	0.0
Others	0.2	0.4	0.2
Subtotal:			
Percent	100.0%	100.0%	11.0%
Deadweight	9,635.7	10,712.2	1,076.5
Tanker Fleet			
50,000 dwt	9.3	30.0	20.7
40-50 dwt	25.9	23.0	(2.9)
20-40 dwt	29.4	26.3	(3.1)
10-20 dwt	25.0	14.5	(10.5)
10,000 dwt	10.4	6.2	(4.2)
Subtotal:			
Percent	100.0%	100.0%	41.0%
Deadweight	5,471.4	7,728.5	2,257.1
Total Deadweight	15,107.3	18,440.7	3,333.4

n/a - Not Applicable

Source: Seatrade, Soviet Shipping

Soviet shipping lines are heavily subsidized to the extent that the capital cost of vessels in the fleet, their depreciation expense, and replacement provisions are not part of the shipping lines span of control or concern. Thus, some 30-35 percent of the costs of Western vessel operations may be absent from Soviet required freight rates. In addition, the cost of fuel is far below current world prices and approximates pre-1973 prices. Marine insurance is not a part of Soviet operators' costs for the State fleet is self-insured. Soviet seamen receive some $60 per week, a pay scale below even those of flag of convenience crews and a rate that Western operators cannot hope to match. Credits flow to the industry at almost no interest.

Given all these economies, the ability of the Soviets to price below Western rates is not surprising. The conduct of Soviet freight rates does not extend shippers the full extent of these economies however, for the Soviets undercut conferences and other competition only to the extent that maximum return and "profit" is realized.

B. POLISH SHIPBUILDINGS AND ITS EFFECT ON MARITIME NATIONS

From thirteenth position in numbers of orders placed in 1970, Poland received 5.8 percent of world orders on a gross tonnage basis, the third largest number of orders in 1975 following Japan and Brazil. By mid-1976 the Polish orderbook was thirteenth largest. From production of less than 100,000 dwt in 1965, Poland delivered more than 1 million dwt in 1975 and with Japan led world fishing vessel production. The majority of Polish production has been for export to the Soviet merchant marine and Poland exports 80 percent of her shipbuilding output. Twenty percent of the Soviet fleet is Polish-built. Table A-5 presents 1975 Polish ship production by shipyard.

Table A-5

1975 OUTPUT OF
UNITED POLISH SHIPYARDS

Builder	No. of Vessels	Vessels Completed		
		Gross Register	Deadweight	% of dwt for Export
Gdynia Shipyard	23	321,950	546,860	99.8
Gdansk Shipyard	33	261,900	296,850	86.3
Szczecin Shipyard	10	114,300	167,200	77.6
Northern Shipyard	11	21,400	9,400	85.1
Utska Shipyard	19	2,110	1,220	nil
Total	96	721,660	1,021,530	92.0

Source: Fairplay, June 17, 1976.

The 1975 output of Poland represented some 1.7 percent of the 59 million dwt produced worldwide. Current plans for the expansion of the Gdansk yard to nearly 1 million dwt will effectively double Polish capacity to 2 million tons (1.4 million grt), or some 5.6 percent of the approximate 25 million grt 1985 forecast demand for world shipbuilding. This represents a more than three-fold increase in the share of Polish shipyards and given the low wages and high level of government assistance, the ability of Poland to compete will render it a threat to high-cost maritime nations.

The ability to employ low-cost personnel efficiently has permitted Poland to secure orders from the West. LNG, LPG, OBO, chemical and products carriers have all been ordered by Western owners from Polish shipyards. The ability of Poland to gain more orders in 1975 than Sweden, Norway, France and the United Kingdom combined can only be a signal of the gravity of COMECON shipbuilding capacity to the maritime nations. Table A-6 presents the relationship between Poland and the six nations studied, excluding Japan.

Table A-6

PERCENTAGE OF WORLD ORDERS PLACED IN COUNTRIES
1971-1975

	1971	1972	1973	1974	1975
Poland	1.9	1.8	1.0	2.1	5.8
Six Less Japan	20.2	18.8	26.0	24.8	10.6

Source: Lloyd's Register of Shipping, *Annual Report 1975*.

Thus, the strength of a centralized and controlled national shipbuilding industry such as that of Poland, buffered by Soviet demand and offering proven standard design with Western machinery poses a major challenge to maritime nations in the coming decade.

C. CONCLUSIONS

In both shipping and shipbuilding the COMECON nations have made tactical advances in operations that are driven by deliberate governmental strategic objectives and executed under economic constraints that are unique to centralized economies. Both industries have striven for competitiveness on the basis of price and service, and both have succeeded in different ways.

The impact of COMECON activity in both shipping and shipbuilding can only be detrimental to developed maritime nations. The enterprises operating with COMECON interference point to the basic undercutting of existing cost structures and artificial economies, but the attractiveness of Soviet freight rates to a European exporter or a Polish chemical tanker to a shipowner remains. This attractiveness exists in one of the freest of world industries, and short of governmental restriction on the utilization of COMECON competitiveness with all the encumbent diplomatic repercussions, developed nations' maritime industries can only educate the public and the government and internally counter COMECON price attractiveness.

Recently a number of independent shipping lines have joined conference, an action which has caused Soviet lines to raise rates upward and increasing profits. Soviet operators appear to be prepared to discuss membership in conferences, but the absence of free world operators in non-conference competition only reinforces the Soviet market position as the low-cost independent service, with any resolution of the overcapacity of liner routes being deferred to diplomatic initiatives.

In contrast to independent shipping lines joining the conference system, certain Western operators have chosen to remain outside conferences. This tactic may increase their market share, particularly those of cross trade operations, but does not permit full competitiveness with COMECON fleets and if widespread, would represent a threat to the stability and service level of worldwide cargo liner service.

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APPENDIX B

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APPENDIX B

OPEC MARITIME ACTIVITY

A. TANKER FLEET

The movement of crude oil from producing areas to consuming areas represents the major tonnage and ton-miles of the shipping industry. Led by the Irabian Gulf states, the trend of nationalization and vertical extension by producing nations into tanker operating could upset the existing relationships between oil companies' fleets, their long-term charters and the spot market forever.

Of the 1,360 million tons of crude oil moved by sea in 1974 for a total of 9,660 billion ton-miles, some 891 million tons of Irabian Gulf oil was transported 8,048 billion ton-miles. Thus, some 66 percent of world oil comprised some 83 percent of all crude oil movement prior to the re-opening of the Suez Canal. The Canal's re-opening reduced the ton-mile requirement significantly, added to the overcapacity of the world's tanker fleet and upset many of the assumptions that led to its expansion. The importance of Irabian Gulf oil given the impending shortfall in world oil supply makes the Organization of Arab Petroleum States (OAPEC) plans for fleet expansion even more important to traditional maritime nations tanker operations.

The relative growth of the OPEC tanker fleet by one-third may be seen in Exhibit B-1, with growth relative to the world taking place following the 1973 oil embargo.

Exhibit B-1

OPEC TANKER FLEETS
1970, 1973 and 1975
(thousands of dwt)

	1970	1973	1975
----------------------Arab Producers------------------------			
Kuwait	787	790	1,294
Iraq	--	245	384
Libya	--	5	415
Algeria	6	82	169
Saudi Arabia	--	28	170
United Arab Emirates	--	--	--
Abu Dhabi	--	--	--
Subtotal	793	1,150	2,432
---------------------Other Producers------------------------			
Venezuela	372	420	415
Iran	63	84	549
Ecuador	2	98	140
Indonesia	85	82	136
Nigeria	--	--	--
Subtotal	522	654	1,240
Total	1,315	1,804	3,672
Percent of World	.9	.8	1.2

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce.

Of far greater significance to maritime nations than the 1.2 percent of the tanker fleet currently operated by OPEC, are the plans for its future expansion. A CIA report of March 1975 shows that the overall OPEC plan of expansion will lead to a fleet of 30.5 million dwt by 1980 as shown in Exhibit B-2. This fleet represents some 11.8 percent of the total 320 million dwt of tankers in existence February 1977 and 38.6 million dwt on order through 1980. This ten-fold increase in share of supply coupled with prospective cargo preference legislation in developing countries could impact on the viability of western oil companies and independent tanker owners.

Another scenario sees OPEC members attempting to achieve a minimum 40 percent share of their exports and imports, as in the pending UNCTAD Liner Code Agreement. Were OPEC production to remain constant, some 35 percent of the world's 1980 tanker fleet or 125 million deadweight tons would be required to transport 1980 OPEC production. As only 39 million dwt of tankers is currently on order, more than 80 million tons would have to be purchased from the world's laid up fleet. The likelihood that the OPEC nations will achieve this goal is very slight, but the impending change in the structure of the world's tanker fleet has great significance. Exhibit B-3 presents the relationship of OPEC to the Irabian Gulf OAPEC states and Iran in required fleet size for various scenarios of carriage.

To carry 40 percent of its cargo by 1980, OPEC would be required to spend more than $21 billion, reports Drewry's, assuming a mix of new and second-hand tonnage. This amounts to one-half the OPEC annual surplus revenues from oil sales.

The greatest obstacle to OPEC fleet expansion is the lack of shipping operations and management expertise. Training schools and academies are being established as are joint ventures and management contracts, but

Exhibit B-2

OPEC TANKER FLEETS

As of January 1, 1975

(thousand DWT)

	Current Fleet	On Order	Cost (millions)	1980 Goal
Total OPEC Members	2,305	7,577	$1,494	30,455
---Arab Producers---				
Kuwait	793	1,344	250	2,657
Iraq	269	1,781	400	4,350
Libya	263	754	184	1,467
Algeria	149	--	--	949
Saudi Arabia	27	80	16	4,132
United Arab Emirates	19	--	--	1,019
Abu Dhabi[1]	--	269	54	1,300
Arab Maritime Petroleum[3] Transport Company	--	1,942	390	10,000[2]
United Arab Maritime[3] Company	--	--	--	150
Total	1,520	6,170	1,294	26,024
---Other Producers---				
Venezuela	420	335	67	1,000
Iran	183	860	100	2,331
Ecuador	100	72	5	250
Indonesia	82	140	28	350
Nigeria	--	--	--	500
Total	785	1,407	200	4,431

[1] Although part of the United Arab Emirates, Abu Dhabi plans a fleet of its own in addition to the UAE fleet.

[2] By 1980-1982.

[3] The more complicated joint ventures are shown here; the less complicated joint ventures are included under individual country totals.

Source: "OPEC Countries Tanker Fleet Expansion", Central Intelligence Agency, March 1975, p. 3, reported from "Recent Developments in the Growth of Arab Tanker Fleets", Nan K. Harles, Office of Policy and Plans, Division of Marine Plans, Maritime Administration, April 1975, p.2.

Exhibit B-3

OPEC SHIPPING DEMAND IN CONTEXT

Quantities in Million DWT/Million M^3 Gas

	World Fleet[1]		1980 Estimated Gross OPEC Shipping Demand				1980 Estimated Gross Shipping Demand Of OAPEC Plus Iran					
			40% Cargo Share		50% Cargo Share		40% Cargo Share			50% Cargo Share		
Ship Type	Mid-1976	Estimated 1980[2]	QTY	% of 1980 World Fleet	QTY	% of 1980 World Fleet	QTY	% of 1980 World Fleet	% of OPEC Demand	QTY	% of 1980 World Fleet	% of OPEC Demand
Tankers	300.0	370.0	128.0	35%	160.0	43%	116.0	31%	91%	145.0	39%	91%
Gas Carriers (LNG/LPG)	6.3	13.0	2.9	22%	3.6	28%	1.9	15%	66%	2.4	18%	67%
General Cargo Vessels	60.0	70.0	13.3	19%	16.5	24%	10.8	15%	81%	13.4	19%	81%
Bulk Carriers	106.0	138.0	(3)	--	(3)	--	(3)	--	--	(3)	--	--
Combination Carriers	46.0	52.0	(3)	--	(3)	--	(3)	--	--	(3)	--	--
Total:												
DWT	512.0	630.0	141.3	--	176.5	--	126.8	--	--	158.4	--	--
M^3	6.3	13.0	2.9	--	3.6	--	1.9	--	--	2.4	--	--

[1] Over 5,000 DWT/5,000 M^3

[2] Forecast

[3] Not estimated

Source: "The Involvement of Oil Exporting Countries in International Shipping", H.P. Drewry Ltd., London, August 1976, p. 69.

officers with sufficient experience to command tankers will not be available until 1985-1990. The continued use of chartered vessels of which OPEC currently has more than 1 million dwt, will afford OPEC owners time and flexibility. Oil producing states may then procure product and chemical carriers as OPEC refining and petro-chemical industries develop.

A realistic forecast made by the Arab Maritime Petroleum Tanker Company (AMPTC) calls for an OAPEC fleet of 9.7 million tons by 1980 composed of 63 vessels. This fleet will not have major impact upon the existing conduct and structure of the world tanker market and will permit OPEC to develop its fleet in one of four ways:

1. The Development of Independent Tanker Companies Without Direct Ties to Oil Producing Companies

The scenario appears to hurt independent tanker operators but the subsidiaries of large multi-nationals would be more likely to succumb. The option finds OPEC constrained by manpower shortages.

2. The Development of Vertically Integrated Oil Companies That Will Own and Operate Tanker Fleets

These companies transport baseload demand and use independent tanker operators to absorb short-term variations in market demand. This scenario would have an enormous impact upon existing oil companies.

3. Joint Ventures Between Existing Importing Oil Companies and Local Producing Companies or Independent Tanker Operators and Producers

This scenario does not provide OPEC with real control of energy fleets, but would hurt small independents most readily if enacted. Control issues would preclude its long-term likelihood.

4. Cargo Preference Laws, Similar to the UNCTAC 40-40-20 Percent Division, with 20 percent of Energy Movements Left to Cross Trading Vessels

In the short-term this model could not be realized due to the shortgage of OPEC tankers. The scenario calls for the altering of the efficient market that is world tanker options and is therefore not congruent with long-term OPEC interests.

Scenarios one and two would appear to be most feasible and will permit independent tanker operators and oil company fleets to compete with OPEC tankers on a competitive basis. Any subsidies from OPEC states to OPEC fleets might be in the form of low cost bunkers that would assure their fleets full utilization due to low costs and would leave only the size of the OPEC fleet to be resolved.

The production of natural gas will be met in the 1980s by sophisticated LNG vessels in addition to the 450,000 grt currently operating and on order for Algeria and Kuwait. A number of VLCC orders were converted to LNG vessels by Arab owners.

B. OPEC LINER OPERATIONS

In 1975 the Arab and Iranian fleets comprised some 1.2 million dwt, up more than 100 percent from .5 million dwt in 1970. More than 1 million dwt of freighters were on order by these nations.

The operation of liner fleets permits OPEC nations to exert a downward force on the high freight rates caused by port congestion. Vessels are frequently manned by Europeans and managed by western shipping companies.

While the expansion of OPEC general cargo fleets is considerable, there will be sufficient traffic and opportunities for independent operators for at least a decade and the market remains highly attractive, particularly to roll-on/roll-off operators.

C. SHIP CONSTRUCTION AND REPAIR

The Arab Shipbuilding and Repair Yard (ASRY), the official dock project of OAPEC, entered operation in 1977. While ASRY will be capable of accommodating the great majority of VLCCs operating in the Irabian Gulf, it represents a further addition to world VLCC repair overcapacity. The shortage of domestic ship repair materials and skilled labor combined with its small scale implies that the impact of OPEC shipbuilding and ship repair projects upon world markets will be minimal, at least until 1985. The projects for shipyard and shiprepair expansion in Algeria, Bahrain, Dubai, Iraq, Kuwait, Saudi Arabia, Iran, and Egypt represent opportunities for western shipyards, contractors, and management firms in the near-term and lost work over the long-term.

D. CONCLUSIONS

The development of OPEC maritime activity is constrained by organizational and personnel resources only in the coming decade. Whatever the final extent of fleet expansion may be, the growth will be significant in tankers and general cargo liners within ten years, and in sophisticated LNG, LPG, and dry cargo vessels by 1990. The shortages of manpower and material will restrict this expansion to shipping and shiprepair, but as LDCs seeking cost effective use of petro-dollars, orders for vessels are likely to be placed in developing nations to take advantage of their capacity and efficiency and to promote third world development. While certain colonial relationships may support Algerian/French or Kuwaiti/U.K. cooperation, the bulk of orders will flow to low cost ship producers like Korea. Thus, the expansion of OPEC fleets may represent only an opportunity to developed nations' fleet managers and suppliers abilities, while the bulk of the vessel construction will fall to emerging shipbuilding nations.

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APPENDIX C

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APPENDIX C

LESS DEVELOPED COUNTRY MARITIME ACTIVITY

A. INTRODUCTION

This Appendix examines the impact of maritime activities of the Lesser Developed Countries (LDCs) upon maritime nations. There are a number of LDCs whose efforts to increase control of the maritime activities that affect their economies have had and will continue to have significant repercussions in the nations studied. In selecting a limited number of LDCs with active shipbuilding and fleet development programs underway, the representation of all forms of LDC policy is not possible. Therefore, the LDCs chosen represent nations in which dramatic government policy has fostered marked progress towards national shipbuilding and fleet expansion objectives for varying reasons and through distinctive programs.

SELECTION

The four nations selected for study as LDCs are Brazil, Korea, India, and Singapore. These four countries exhibited the most significant activity in shipbuilding activity during the study period 1971-1975. Exhibit C-1 shows activity for these four LDCs combined as well as percentages of world activity. The emergence of Singapore as a flag of convenience is notable with registrations rising to 16th place in 1975. The ascendance of Brazil, South Korea and India as shipbuilders saw their share of the world orders increased from 2.7 percent in 1971 to 13.3 percent. Holding a total of 6 percent of world orders at year-end 1975 and 9 percent by April 1977, the importance of LDC shipbuilding and LDC fleet procurement and expansion will have a major impact on maritime nations.

Exhibit C-1

Measures of Maritime Activity

A. Activity Levels, 1975

	Vessels	DWT	DWT as % World
Fleet			
Delivered to 4 LDCs	82	3.85m	6.5
On Order by 4 LDCs	243	9.70m	5.5
Shipbuilding			
Delivered by 4 LDCs	35	1.25m	2.1
On Order at 4 LDCs	289	10.88m	6.2

B. Trends 1970-1975

	1970	1971	1972	1973	1974	1975
Fleet Size (World Rank by dwt)						
Brazil	19	21	19	19	19	18
India	16	16	16	16	16	16
Korea	29	27	29	29	27	26
Singapore	37	36	28	18	18	16
Shipbuilding Orders[a] (Percent of World)						
Brazil	NA	2.3	0.8	1.1	5.4	7.7
South Korea	NA	0.0	0.0	1.3	2.8	3.7
India	NA	0.4	0.1	0.0	0.0	1.9
Subtotal	NA	2.7	0.9	2.4	8.2	13.3

a) Source: Lloyd's Register of Shipping, Annual Report 1975.

B. BRAZIL

1. Overview

Unique for its rapid development of both its shipbuilding capacity and its fleet, Brazil's progress was established by a series of five year plans controlled by highly centralized government mechanisms.

In 1970 the Brazilian fleet was 2.0 million dwt and the goal for 1980 is a fleet of 10.0 million dwt. Although Brazil's gross tonnage grew at a compounded rate of some 15 percent, less than the LDC average, some 59 vessels of 2.52 million grt were added by the end of 1975, more than doubling the fleet's size. Brazilian fleet expansion is presented in Exhibit C-2.

Simultaneously, Brazilian shipyard output expanded from 16 vessels of 150,700 tons in 1970 to 18 vessels of 541,100 dwt in 1975, a tonnage increase of 360 percent. Thirteen vessels of 633,000 dwt were delivered in 1976. Brazil's first export ship order was won in 1972 for six standard SD-14 cargo vessels for West German owners.

2. Brazilian Maritime Aids

The government managed domestic fleet expansion and construction with funds generated by a 20 percent tax on imported and coastwise freight instituted in 1958. These revenues permitted loans of 85 percent of a vessel's cost at 6 percent interest over 15 years through the National Merchant Marine Refinancing Fund created in 1967 and funded by loans and existing naval export appropriations. The Fund, managed by the Superintendency of the National Merchant Marine, SUNAMAM, was created to absorb the early shipbuilding cost differentials of more costly Brazilian-built vessels during 1971-1975. Presently, prices for general cargo tonnage are as low as one-half those of U.K. shipyards and the Fund is now being replenished as Brazilian owners pay higher prices for home-built

Exhibit C-2

BRAZIL

OCEANGOING FLEET, VESSELS OF 1,000 GRT OR MORE

1970-1975

(tonnage in thousands)

	1970	1971	1972	1973	1974	1975
Total Vessels						
Number	201	215	233	251	257	260
DWT	2,017	2,188	2,436	2,983	4,039	4,546
GRT	1,400	1,536	1,722	2,042	2,558	2,837
Tankers						
Number	45	46	44	52	53	53
DWT	810	824	808	1,212	1,772	1,944
GRT	543	552	530	762	1,029	1,111
Bulk Carriers						
Number	26	26	29	28	33	35
DWT	464	471	564	592	1,047	1,304
GRT	293	293	348	361	593	741
Freighters						
Number	123	137	152	163	163	166
DWT	723	877	1,048	1,161	1,202	1,286
GRT	522	658	807	880	897	954

Source: Merchant Fleets of the World, Maritime Administration,
U.S. Department of Commerce.

vessels than do overseas customers. This replenishment will permit Brazil once again to absorb losses and to compete on the world market for more sophisticated and larger vessels than those currently under construction.

SUNAMAM has absolute pricing power over Brazil's six major and three minor yards on domestic contracts and establishes costs based on detailed data, attaching a 10 percent gross profit with 4 percent net profit. Brazilian owners pay SUNAMAM, not Brazilian shipyards.

SUNAMAM controls the strategic policies of Brazilian shipping lines, in a radical departure from the latitude most shipowners enjoy worldwide. In mid-1975 SUNAMAM permitted private owners to move into dry bulk operations as part of the Second National Development Plan for 1976 to 1980. Only 4 percent of all tonnage required for the completion of the Second Plan has been ordered from foreign shipyards, the remainder of the vessels are to be built in Brazil.

Where the cost of Brazilian vessels exceeds that of the European market price, owners pay only the market cost, the government providing the difference. This quasi-subsidy is described by Brazilian shipbuilders as a tax rebate because of the obligations of Brazilian shipowners to SUNAMAM. Brazilian owners must provide 20 percent of a vessel's cost in cash, as compared to 30 percent in OECD nations. Owners must serve the remaining 80 percent of the vessel cost over 15 years, not the seven years specified by OECD, at an interest rate of 8 percent, the same rate that developed nations are permitted.

The SUNAMAM requirements extend beyond vessel financing however, for owners must pay SUNAMAM 10 percent of all inbound freight revenues monthly and place another 10 percent of inbound revenues into a vessel purchase and repair account.

As is Japan, SUNAMAM has adjusted maritime aids as owners and industries have gained experience and strength. Downpayments increased from 15 to 20 percent in 1974, as did interest rates, which rose from 6 percent to 8 percent.

The government also purchased shipyard stock, provided loans to all yards and assisted in site infrastructural development. Taxes are levied only on shipyard and ancillary industry income; no duty is charged on imported marine materials and equipment. However, a ban has been imposed on marine equipment imports due to balance of payments problems and a desire to develop the domestic industry. This ban has caused havoc in Brazilian shipyards, as delivery times slipped for want of components.

The Brazilian fleet expansion via orders from domestic yards represented a lost opportunity for the six major maritime nations and other developed shipbuilding nations. The 43 cargo liners of 432,000 grt that entered the fleet between the ends of 1970 and 1975 represented 11 percent of all cargo liner tonnage added to non-Comecon fleets in this period. Of this new Brazilian tonnage, ten cargo vessels of 120,000 total deadweight were imported, all from Poland and of the 60 cargo liners on order at the end of 1975, none were on order abroad. This self-sufficiency, at a time when the study nations' cargo liner fleets declined by 1,142 ships and 3.94 million grt did not help major shipbuilding nations' yards traditionally engaged in liner construction.

Under the Second National Development Plan, the Brazilian government has placed orders for 150 ocean-going vessels to be added between 1976 and 1980, adding some 5.3 million dwt to the 260 ship 4.54 million dwt Brazilian fleet of December 1975. Only 21 of these ships will be imported, mostly specialized types. Companhia Comercio e Navegacao (CCN), the most experienced shipyard, received orders for 45 of these vessels representing 859,000 dwt. To ease shipyard concern over equipment import bans, a consortium of yards created an engineering firm, CEC Equipamentor Maritimos e Industrials. CEC will compete for a large part of the $800 million of marine engineering contracts to be let for the 129 Brazilian-built vessels.

This five-year plan for fleet expansion through domestic construction will increase Brazil's current output above the 541,000 dwt/327,000 grt delivered in 1975, futher diminishing foreign shipyard prospects for Brazilian orders. Tentative delivery schedules for 1977 call for deliveries of at least 30 vessels of 768,000 dwt, an increase of more than 40 percent. This projected output constitutes some 7.5 percent of the world's anticipated non-Japanese ship production in future years and represents a significant loss in potential market for the study nations.

Although Brazilian shipyards were able to supply the fleet with liners, bulk carriers and tankers up to the Panamax size, the procurement policy was marked by pragmatism. When delivery times were long or one-of-a-kind vessels were required, Brazil sought vessels from other nations including the six study nations. Germany supplied a drydock and Norway supplied chemical tankers. Common early ships included the English SD-14 and Canadian 26/15 bulk designs.

As the fleet progresses towards its goal of 40 percent of cargos carried in Brazilian bottoms, fleet expansion will continue. Despite active government regulation of trade, only 20 percent of all cargos were lifted by Brazilian vessels in 1975 and only by 1985 will the goal be achieved. The government has stipulated that all coastal cargos, paper, petroleum and government-financed imports and exports must be moved in Brazilian ships, unless released by the Superintendent of the merchant marine. Cargos not served by either nation's vessels are subject to designation of carrier by Brazil and if equal trade agreements exist, Brazil is entitled to 50 percent of the movements. Equal carriage agreements exist with certain South American nations as well as the cargo bound for the United States. All foreign operators must be parties in Brazilian freight conference.

The Brazilian fleet has engaged in cargo pooling arrangements, particularly with raw material-hungry Japan, in which Japanese tankers will deliver Persian crude to Brazil and Brazilian bulk vessels will take ore to Japan's steel mills. The presence of Japanese steel and shipbuilding expertise in Brazil no doubt contributed to the perceived mutuality of interests.

3. Conclusions

The explosive growth of Brazil's shipyards and fleet over the study period represents the most determined and comprehensive commitment of any LDC government to these industries. The expansion of the Brazilian orderbook greatly outstripped the Brazilian capacity to produce vessels which has resulted in extremely long delivery times. At the 1976 level output, Brazil's shipyards held more than eight years of work. Despite forecast productivity increases, the long lead times are attractive only to shipowners hoping for deliveries at low current prices in time for the next shipping boom.

Brazilian shipbuilding capacity has been less critical to the study nations than the export orders it has attracted through non-OECD terms and the lost work that resulted from SUNAMAM's comprehensive vessel procurement policies. The ability of Brazil to produce sophisticated and specialized tonnage in the 1980s could increase the impact of Brazilian shipbuilding upon the world's traditional shipbuilding nations and further erode the position of high cost shipyards.

C. SOUTH KOREA

1. Overview

Korea represents the rapid emergence of an LDC as a major world ship exporting nation. From deliveries of one tanker of 5,000 dwt in 1970, Korea's output reached a record ten ships of 615,700 dwt in 1975. Despite a flurry of cargo preference and fleet assistance measures, Korea's fleet gross tonnage grew at a compound rate of 11.6 percent in 1970-1975, only two-thirds the rate of all LDCs and only slightly better than the world average. Korean fleet activity is shown in Exhibit C-3.

The growth of Korean shipbuilding was explosive. In 1962 Korea's total ship production was 4,600 grt and ten years later, when Korea's first ship exceeding 10,000 grt was launched, national output was 50,000 grt. In 1970 a single tanker of 5,000 dwt was delivered. In 1973 a 260,000 dwt tanker was launched and deliveries were 1 million grt. Korea's 1975 output was ten vessels of 615,700 dwt. Today, Korea has 54 shipyards, 12 capable of constructing vessels greater than 500 grt. In the period 1974-1975, 13 ships of 933,400 dwt were exported and only four ships of 340,000 were imported. All ships less than 13,000 tons must be built in Korea.

With support of the government, Korea's three major yards, Hyundai, Korea Shipbuilding and Dae Sun pursued numerous bulk carrier and tanker contracts into 1974, using costly high labor efficient facilities for big ship construction. The recession caused Korean yards much concern, but with great agility the yards converted to cargo ship construction capitalizing upon their cheap labor force. Korean yards underbid Japanese yards by 20 percent for 15,000-20,000 ton cargo liners and secured a Kuwaiti order for twenty-five 23,000 dwt liners due at 15-day intervals, using a U.K. design.

In 1976 Korea held 2.5 percent of the world's orderbook and industry leaders maintained that a 5 percent share by 1978 was possible on a competitive basis. Thus, the Korean and Brazilian share of the world orderbook may approach 12-15 percent by 1980.

Exhibit C-3

SOUTH KOREA

OCEANGOING FLEET, VESSELS OF 1,000 GRT OR MORE

1970-1975

(tonnage in thousands)

	1970	1971	1972	1973	1974	1975
Total Vessels						
Number	103	107	119	122	138	163
DWT	1,228	1,396	1,361	1,647	2,035	2,208
GRT	766	862	874	1,008	1,204	1,324
Tankers						
Number	18	22	24	25	29	30
DWT	510	688	582	809	1,146	1,150
GRT	293	396	340	456	621	632
Bulk Carriers						
Number	17	16	18	17	21	24
DWT	300	286	340	329	340	380
GRT	187	177	212	205	211	236
Freighters						
Number	67	68	76	79	87	108
DWT	407	411	426	498	538	672
GRT	276	279	312	337	362	446

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce.

2. Korean Maritime Aids

As an LDC with cheap labor but limited credit, the Korean government has offered terms in excess of OECD guidelines of 70 percent, seven years, with 80 percent over eight years, and even 85 percent at 7.5 percent over 15 years. This has strained the goodwill of Korea's major trading partners, particularly Japan. The government offers financing in the customers currency and charges no duty on shipyard-related imports and no internal tax on similar goods produced domestically. The government provides shipyards with short-term credit to cover the construction period.

The rapid growth of Korean shipbuilding marks yet another competitive and attractive supplier of world shipbuilding capacity. In the period 1974-1975 thirteen ships of 933,400 dwt were exported while four ships of 340,900 dwt were imported for Korean owners. The optimum capacity of the Hyundai Shipyard alone has been established at 2.5 million dwt, either in the form of 60 to 70 cargo vessels, or 15 VLCCs. While Japan has passed an ordinance forbidding large Japanese yards from building many small vessels in VLCC building docks as a measure to project small yards, Korea has few small yards and feels no need to limit construction policy.

In contrast to Korea's ascendance as a leading shipbuilder and ship exporter, Korea's fleet continues to lift less than 25 percent of its outbound cargo and 35 percent of all trade. The tremendous need for Korean ships was not filled and the rapid growth in Korean exports makes improvement in the home-vessel share of shipments more difficult.

As rapidly increasing exports strained the relatively slower growing Korean fleet, the government established numerous cargo preference requirements. In terms of overall policy all coastal, petroleum, and certain other raw materials were required to be imported only in Korean vessels. All forwarders must specify only Korean vessels and the Korean government is prepared to subsidize the losses incurred by Korean vessels operating on regular international trade routes; vessels ordered to a route by the government; and vessels ordered replaced by the government. Korea refuses to share cargos with the Japanese. Trade with Japan represents 24 percent of Korea's cargos. The Korean fleet carries 99 percent of all her trade with Japan which amounts to approximately 2 million tons per year of non-containerized cargo and 1 million tons of containerized cargo.

In mid-1974 the Korean Ministry of Transport in its third five year plan (1972-1976, determined that for 50 percent carriage of exports by 1981 a six-fold fleet expansion is required. A target of the fourth five year plan (1977-1981) is the acquisition of 6 million gross tons of new and used ships, including 1.4 million grt for the national line, the Korean Shipping Corporation. In mid-1976 the government announced that the plan will be supported by financial assistance and tax incentives for acquired bulk carriers, chemical tankers, containerships, and cargo liners. Given the depressed market generally and competitiveness of Korean yards, many vessels are expected to be built at home. Despite such intentions, the Japanese amended a joint venture for a 150,000 ton capability yard downward to 80,000 tons.

The agility of Korea's yards through efficiency, attractive financing and low labor costs coupled with government incentives for domestic owners permitted rapid growth in small ship orders. In 1975, 17 cargo vessels of 354,000 dwt were on order, all for export. By October 1976 Korea had orders for 53 cargo vessels of 908,000 dwt, six of them for the home fleet. In December 1975 Korea held orders for eight bulk carriers of 120,100 dwt all for export. By October 1976 the orderbook consisted of 11 bulk carriers of 303,000 dwt including four for Korean owners and one for a Japanese owner.

The Korean government has provided an effective helping hand to the Korean fleet through procurements under FOB rather than CIF contract. The state-owned Korean Shipping Corporation, the major carrier of government cargos receives a lower freight rate.

The government will provide loans of 85 percent of a vessel's cost at 7.5 percent interest with 15 year terms for domestic owners and uses loans as a tool for the importation and chartering of ships if they are to become Korean within five years. Funds for the secondary objectives of improvement and repair are also available.

3. Conclusions

Korea's capabilities emerged at the peak of the world shipbuilding boom and her strengths have permitted her to increase her performance relative to world leaders including Japan. Buoyed by cheap labor, the young Korean shipbuilding industry operates from a position of great strength. The monolithic structure of Korea's shipbuilding industry, frees it from any considerations of invasion of small domestic shipyard markets while her facilities are among the world's youngest and most advanced. Already an important supplier of steel to the Japanese shipbuilding industry, Korea can now add greater value to the steel industry through shipbuilding and compete with Japan on the basis of price and product.

D. INDIA

1. Overview

India is a nation with a long-standing tradition in cargo-liner and tramp operation. During the early 1970s the nation embarked upon a program of bulk carrier and tanker acquisition, the largest increase in fleet size of any LDC in absolute terms. Although 45 percent of India's trade is with Europe, and 80 percent of all 1975 earnings of state-owned SCINDIA line were from liner operations, India's decision to invest in bulk carriers resulted in the acquisition of 39 bulk carriers of 1.03 million grt and 12 tankers of 1.0 million dwt. These procurements of ships represent 37 percent and 14 percent, respectively, of all such tonnages delivered to non-OPEC LDCs over the study period. Exhibit C-4 presents the growth of the Indian fleet over the study period.

India's interest in bulk carriers and tankers in the early 1970s was due to the large volumes of such cargos in India's foreign trade. Increased oil prices caused interest by several nations in India's low-sulphur coal and Japanese, European, and Comecon-bound coal exports developed. Imports of fertilizers, grain, and oil also provided inpetus for the decision to increase the non-liner sectors of the fleet. This demand permitted the Indian fleet to resist the recession well, with no lay-ups.

The re-opening of the Suez Canal in mid-1975 greatly reduced the distances for several of India's trades. This coupled with discoveries of offshore oil in the Bombay High area caused the government to reduce overseas orders for additional liquid and dry bulk carriers.

In the liner sector, the large number of under-developed ports and the inland waterway network has generated interest by Scandinavian and American LASH operators in opportunities for increased efficiency

Exhibit C-4

INDIA

OCEANGOING FLEET, VESSELS OF 1,000 GRT OR MORE

1970-1975

(tonnage in thousands)

	1970	1971	1972	1973	1974	1975
Total Vessels						
Number	242	249	253	264	288	308
DWT	3,709	3,918	4,125	4,669	5,843	6,943
GRT	2,409	2,552	2,672	3,011	3,746	4,400
Tankers						
Number	13	13	13	16	21	25
DWT	510	507	510	638	1,039	1,510
GRT	300	299	299	378	644	940
Bulk Carriers						
Number	37	43	44	52	66	76
DWT	1,334	1,508	1,609	1,992	2,667	3,129
GRT	786	895	951	1,169	1,563	1,815
Freighters						
Number	181	181	184	186	190	198
DWT	1,805	1,834	1,937	1,975	2,065	2,252
GRT	1,260	1,287	1,351	1,392	1,458	1,580

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce.

and reduced port time. Although India operates no fully containerized vessels, Indian ship operators expect to enter both the LASH and container trades as port facilities develop.

2. Fleet Aid Programs

To encourage India's program of bulk carrier fleet expansion, the government created incentives for Indian owners to acquire new vessels. By relaxing foreign exchange restrictions, raising the ceiling on tax free interest rates on loans to 7 or 8 percent, and providing loans that covered 90 percent of the cost of new vessels at interest rates of 4.5 percent. These financial incentives encouraged Indian owners to place orders with the major maritime and COMECON shipyards for a variety of ship types.

Along with direct financial assistance India extended to her ship owners a development rebate from profits of up to 40 percent and 20 percent of the cost of new and used ships respectively. Vessels had to be ordered by March 31, 1974 and delivered by December 31, 1976 to qualify. Owners could also claim an exemption from income taxes on profits up to 6 percent per annum of capital employed for the construction of new ships. Such plans were intended to encourage orders placed abroad, for India's shipbuilding capacity was not capable of meeting a signficant portion of the demand. Finally, after exchange rate fluctuations the government permitted owners to write-up assets for computing both depreciation and capital gains on sales of vessels. This freed cash for fleet expansion via both increased depreciation and reduced capital gains taxes.

In all, the programs caused the Indian fleet to expand by 66 vessels and 3.23 million dwt between 1970 and 1975, some 87 percent. In November of 1975, the government announced a freeze on OBO and crude carrier orders due in part to intentions to decrease imports of costly raw materials, to prospects for offshore oil production and to the re-opening of the Suez Canal.

Government intentions to increase domestic ship production also contributed to the decision. The announcement quashed European, Japanese and Comecon hopes for additional sorely-needed ship orders in deadweight ranges capable of efficiently utilizing their facilities. This decision may also mark the end of decades of India's dependence upon the U.K. and other nations for tonnage.

In late 1975 the state-owned Shipping Corporation of India (SCINDIA) with a fleet in excess of 3 million dwt and the Iranian state-owned Arya National Shipping Line announced plans for a joint shipping venture. This venture could be typical of many more in the future, where raw materials are traded in both directions (oil to India, ore, coal and cement to Iran).

With a fleet of 4.4 million grt at year-end 1975, a goal of 6.5 million grt was set for the Indian fleet by April 1979 as part of a national plan. To support the acquisition of these vessels the Indian government increased the availability of loans in rupels and also made available more than $500 million in foreign currency loans for the procurement of second-hand general cargo and dry bulk tonnage and selected newbuilding contracts to be let in Indian or Japanese shipyards.

3. Shipbuilding

By contrast to India's longstanding presence in cargo liner and tramp shipping, the shipyards of India were not developed as a major industry until recently. In the early 1970s only one major shipyard, the government-owned Hindustan Shipyard, produced merchant vessels, and production was only for domestic clients. The government set out to nearly triple Hindustan's output by 1980, from only two or three 12,500 dwt vessels to six of 14,500 dwt each. The government also decided to build a 57,000 dwt drydock to reduce Indian dependence upon foreign repair yards for the maintenance and repair of her growing bulk fleet.

An additional step was taken by the government through a joint venture with Japan's Mitsubishi for the construction of a new shipyard at Cochin. The yard will build and repair vessels up to 85,000 dwt thus permitting increased self-sufficiency in larger bulk ship construction. The Cochin yard was scheduled to be fully operational in 1976. Yard personnel were trained by the U.K.'s Scott Lithgow and they commenced construction of a Lithgow-designed Panamax bulk carrier in 1975 for 1978 delivery to Scindia. As of October 1976 the Cochin yard had orders for eleven bulk carriers of 813,000 aggregate deadweight, some 63 percent of all Indian bulk carrier dwt on order.

India's two smaller shipyards are both operated by the Ministry of Defense and have built smaller vessels for the Indian Navy and the various Port Trusts. The Garden Reach Shipyard was expanded to build 26,000 dwt cargo liners and by October 1976 had seven bulk vessels of 170,000 dwt on order as compared to only a single suction dredge of 3,500 dwt in 1973. The Mazagon Dock has recently been occupied with the construction of frigates of British design, vessels with a high labor content which were sorely needed by British naval shipyards. In early 1976, Nazagon launched the first Indian-built vessels for export, for the flag of Singapore. The Garden Reach yard is also producing diesel engines under license.

The Indian government provides the state-owned Hindustan yard with direct payments of 5 percent of the fairly valued international price of each ship produced. The subsidy will be reduced at the rate of 10 percent every two years. All vessels built in Indian yards qualify for loans of up to 95 percent of their cost.

Overall, these programs have served to develop Indian capacity in large vessel construction. In December 1970, Indian shipyard orderbooks contained five vessels of 49,800 deadweight, the largest being a general cargo ship of 10,400 dwt. By December 1975, India's shipyard backlog was 49 ships of 1,417,500 total deadweight, the largest being a bulk carrier of 75,000 dwt.

By late 1976 Indian shipyard held orders for 20 bulk carriers all for the home fleet which totaled 1.073 million deadweight. Only six bulk carriers of 254,000 dwt remained on order abroad, these in Yugoslavia, the U.K. and Japan. By contrast, India was awaiting 20 bulk carriers of 1.3 million dwt from foreign yards at the end of 1974. The development of domestic yards has reduced India's need for foreign capacity and nations like Yugoslavia can no longer hope for the orders of as many as ten coal carriers in a single contract. The development of domestic shipbuilding facilities has permitted India to consider the importation of Polish bulk carrier hulls for outfitting at home.

Although India has no tankers under construction at home, her liquid bulk orders abroad approach completion and the subsequent freeze on bulk orders drew down tankers outstanding at years-end 1976 by 14 vessels and 1.3 million dwt. Only six tankers of 187,000 dwt were on order in November 1976.

The great majority of India's general cargo vessels are on order abroad, reflecting India's limited annual shipbuilding capacity and the desire for cargo vessels on short lead times to garner more of the high-value liner trades as soon as possible. Only one of the 17 cargo vessels on order was at an Indian yard in late 1976, most of the remainder were on order in Japan.

4. Conclusions

India typifies LDCs seeking to reduce trade deficits and earn foreign exchange through shipbuilding and shipping. The government stances on cargo preference tend to reflect these goals, India's goal being 50 percent of all her trade, compared to less than 35 percent in 1977. This strong motivation for national carriage portends bilateral and even unilateral trade agreements that can have a significant impact upon cross trading study nations in all sectors and particularly in the bulk trades so basic to Indian trade.

The emergence of Indian shipbuilding similarly represents a lost opportunity for major maritime nations in conventional vessel construction and calls for close cooperation and marketing of capacity for sophisticated cargo tonnage when the future need arises.

E. SINGAPORE

1. Overview

Singapore was selected as a representative LDC for the growth in her fleet. The fleet grew more rapidly than any other nation between 1970 and 1975 at compounded rates per year of nearly 35 percent in vessels and more than 58 percent in gross registered tonnage. Singapore's activity was due not to internally-generated growth, but rather to her conversion to an income tax-free flag of convenience nation as of January 1, 1970.

This step, coupled with low initial and annual tonnage taxes with 50 percent reduction in annual taxation if 25 percent of a vessel's crew are Singaporeans, caused vessels of all types to convert to Singapore registry or to be built for registration under the flag of Singapore. Over the five year period of December 1975, 62 tankers of 3,838,000 dwt were registered in Singapore, in deadweight a compounded annual growth of 99 percent. Bulk carrier registration grew at a compounded 113 percent annual rate, measured in gross tonnage while liner gross ton registration swelled at a rate of 37 percent per year. Exhibit C-5 records Singapore's fleet growth.

2. Shipbuilding and Shiprepair

While Singapore's growth as a flag of registry was dramatic, so was her emergence as a shiprepair and shipbuilding center. Recognizing the Port of Singapore's pivotal location near the Malacca Straits and the proximity of many inter-island shipping lanes, the government set out to use both to Singapore's advantage.

The government engaged in two ventures directly. With IHI of Japan, the Jurong shipbuilding and shiprepair facility was created to repair VLCCs and ULCCs and to build merchant vessels including the standard

Exhibit C-5

SINGAPORE

OCEANGOING FLEET, VESSELS OF 1,000 GRT OR MORE

1970-1975

(tonnage in thousands)

	1970	1971	1972	1973	1974	1975
Total Vessels						
Number	90	122	176	274	346	403
DWT	608	840	1,425	3,275	5,118	6,599
GRT	463	628	1,025	2,173	3,296	4,594
Tankers						
Number	11	13	14	29	48	73
DWT	127	127	129	754	1,834	3,965
GRT	84	84	85	436	1,055	2,135
Bulk Carriers						
Number	3	4	6	22	37	44
DWT	32	50	240	954	1,413	1,613
GRT	22	36	148	566	843	962
Freighters						
Number	62	92	138	206	242	268
DWT	374	592	966	1,496	1,776	1,926
GRT	281	445	700	1,086	1,281	1,373

Source: Merchant Fleets of the World, Maritime Administration, U.S. Department of Commerce.

IHI Freedomship. The government also operates the Keppel and the Sewambang yards, Sweambang with public participation. Both yards cater to superships plying between the Irabian Gulf and the Orient. Both Sewanbang and Keppel have management contracts with Swan Hunter, but both contracts are in the process of phasing out.

The Development Bank of Singapore is prepared to extend eight year 9.5 percent loans to new or old yards. Two major Japanese shipbuilders, Hitachi Zosen and Mitsubishi, have established 51 percent owned repair yards in Singapore in an effort to exploit its location and labor force which is paid one-third that of Japanese labor but is one-third less productive. The government has provided training and urged wage restraint by its workers, recognizing that her shipyards will thrive only if they can compete successfully on labor and production costs against Scandinavian and other European yards in small ship production.

As of October 1976, 26 vessels ranging from tugs and supply vessels to 96,500 dwt tankers were under construction in Singapore aggregating more than 410,000 deadweight.

To support these local shipbuilding operations Singapore's Development Bank for vessels greater than 5,000 dwt will provide financing of 50 percent of a locally-built vessels' cost, with seven year terms and fixed OECD interest rates. The bank offers similar loans at about 9.5 percent for vessels less than 5,000 dwt, the remainder of the capital available at commercial banks. The Development Bank will not finance locally-built drilling rigs, which are built by the American rigbuilders Bethlehem, Levingston and Marathon.

These three rig manufacturers made Singapore the world's foremost jack-up rig builders. However, the severe under-utilization of Japanese yards has pitted the two nations in direct opposition, Japan pushing its experience and the more sophisticated semi-submersible rigs, Singapore its jack-ups against a declining world demand. Singapore's rig builders are also pursuing offshore support craft contracts to remain busy (Exhibit C-6).

3. Conclusions

The emergence of Singapore as a flag of convenience is a unilateral action of more concern to other flag of convenience nations than to traditional maritime nations. Singapore's development as a shipbuilder and shiprepair center represents the realization of natural competitive factors, both geographical and demographic. The competition between Singapore and Japan for small ship construction, repairs and drilling rig construction has been fierce, the result of a real threat to the strongest of shipbuilding nations by a relatively new entrant to a complex industry.

Exhibit C-6

RIGS ON ORDER OR UNDER CONSTRUCTION

	Singapore	Japan
November 1974		
Jack-ups	6	3
Semi-submersibles	1	4
Oil drilling rigs	1	1
	8	8
November 1975		
Jack-ups	10	5
Semi-submersibles	2	1
	12	6
November 1976		
Jack-ups	5	1
Semi-submersibles	1	3
Oil drilling rigs	0	1
	6	5

Source: Fairplay, World Ships on Order, quarterly.

APPENDIX D

SYNOPSIS OF THE OECD UNDERSTANDING ON EXPORT CREDIT FOR SHIPS

As amended by resolution December 16, 1970, July 18, 1974 and November 5, 1975.

1. From July 1, 1974, governments participating in the Understanding will abolish all existing official programs and not introduce any other programs for ship exports other than these terms:

   (i) maximum duration of loan seven years from delivery and repayment by equal installments of six months and not more than 12 months.

   (ii) payment by delivery of not less than 30 percent of the contract price.

   (iii) an interest rate of not less than 8 percent, net of all charges which are not directly related to the amount of credit.

2. This minimum interest rate of 8 percent will apply if official support is given for the whole or a part of the support by the shipbuilder or a bank to the buyer.

3. This minimum interest rate will apply to the shipbuilder or to a customer in the shipbuilder's country, if official support is given for the whole or part of the credit.

4. Insofar as other public bodies promote exports, governments agree to use all possible influence to prevent the financing of ships on terms which contravene the above principles.

5. Governments will make their best endeavors to ensure that no terms more favorable than those of the Understanding will be offered to buyers by any other means.

6. Any government participating in the Understanding may concede more favorable terms in a particular case for reasons of genuine aid. Notification must be made to all participating governments at least six weeks prior to the commitment of such funds.

7. Should a Government participating in the Understanding seek to extend terms more favorable for reasons other than those in clause 6, it must provide adequate notice to participating governments. Adequate notice must be made in time to permit other governments to compete effectively on these terms. At least seven days must be provided if tenders are invited. Support including aid will be refused for any order finally placed on more favorable terms unless the terms of the clause and clause 6 are honored.

8. Any Government participating in the Understanding may support more favorable terms in particular substantiated cases to match the terms of officially supported transactions or to meet contravention of the above terms by particpating or non-participating governments provided maximum notice of the decision is given to all other participating governments.

APPENDIX E

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